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OCCUPATIONAL DERMATOSES*

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THE SUBJECT of occupational dermatoses dates back as far as the sixteenth century and, at the present time, these disorders represent one of the greatest causes of lost time due to sickness. Yet, comparatively speaking, little has been written on the subject. Schwartz, one of the leading U.S. authorities, says that 1% of industrial workers are affected by industrial dermatosis at any one given time. He further states that occupational dermatoses comprise about two-thirds of all occupational diseases for which compensation is paid. Other investigators have noted that industrial dermatoses usually comprise 30 to 40% of occupational disease reported. The Council on Industrial Health of the American Medical Association believes that a conservative estimate of the total cost of occupational dermatoses in the United States is in excess of 150-200 million dollars in an average year. It would appear then that greater emphasis must be placed on this problem in our training of doctors who work in industry, or that more trained dermatologists should be used in an effort to reduce the ever-increasing number of workers affected.

Canada is a very young country industrially. Percival Potts, in England, wrote on chimney-sweep's cancer of the scrotum in 1775, a year after the Quebec Act guaranteed the French, in Canada, their religion, language and civil laws. This was only a few years after Quebec and Montreal fell to the British. What the incidence of industrial skin disease was in Canada at that time is unknown, but it must have been small indeed. Since the beginning of the twentieth century, however, Canada has become more and more industrialized, until today our urban population has increased to over 60% of the total, and the Department of National Health and Welfare estimates that, broadly speaking, 1% of industrial workers are affected annually with occupational dermatoses, a figure which is not unlike those reported from other countries, as cited above.

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The aircraft factory I would like to discuss, from a cutaneous standpoint, so to speak, would not be considered large in Britain or in the United States. The population has varied in the last ten years between 5000 and 15,000. It is, however, large enough to give us a good cross-section of the hazards which are met with in industry and is small enough for one person to be able to see all the skin problems over a period of eight years.

My association with this factory began in 1952, when the population was growing very rapidly, and the surgeon in charge of the medical department asked management for specialized help to take care of the increasing number of skin problems. From the dermatologist's standpoint, this was an unusual opportunity. We have always seen a goodly number of patients from industry in our office, but usually they have come long after the disease process has begun and after all, or many, of the remedies in the first-aid kit have been tried. This has meant that the initial lesions are often spread far beyond what they were in the beginning. This has made diagnosis difficult and many times a single sensitivity has been turned into a multiple sensitivity, which makes treatment difficult. Rarely were we given the opportunity to see what the worker came in contact with during his work, or to follow his progress to a satisfactory conclusion.

The year we began, the population grew to over 10,000. We visited the plant for half a day a week, and apart from the occasional acute case which was sent to the office or admitted to hospital, this was the only contact we had with the employees.

RESULTS OF DERMATOLOGICAL SUPERVISION

Table I shows that in 1951, which we will call the control period, there was a total of 802 lost days because of skin disease, or 19 lost days per 100 people employed.

In 1952, the first year with specialist dermatological supervision, there was a reduction in lost days from 802 to 55.8 days, in spite of the fact that the number of employees had increased more than $2\frac{1}{2}$ times. If this is considered in terms of days lost per 100 employees per year, the figures are

TABLE I.—TOTAL DAYS LOST BECAUSE OF SKIN DISEASE

	Average population	Total days lost per year	Days lost per 100 employees per year
1951	4217	802.0	19.0
1952	10,838	55.8	0.54
1953	11,883	199.0	1.67
1954	8720	40.0	0.46
1955	8023	12.0	0.15
1956	8884	14.0	0.17
1957	10,509	43.0	0.42
Average 1952 to 1957	9810	60.6	0.57

even more striking—19 days lost per 100 employees per year in 1951, as compared with 0.54 in 1952.

It was wondered initially whether the first year's experience could be attributed to beginner's luck. For the following five years, however, the same rate of improvement was maintained and the average loss per 100 employees per year from 1952 to 1957 was 0.57 days. The number of days lost then, during the control period, was 33 times greater than the average for the following six years.

INVESTIGATION OF THE SITUATION

In equipping a medical department where a physician is not in constant attendance, it is considered important that remedies for local application should be of the simplest nature.

Our first task on going to the plant, therefore, was to remove all sensitizers from the shelves of the main and subsidiary first-aid stations (these included mercurials, sulfonamides, dyes, etc.) and replace them with neomycin and Vioform (iodochlorhydroxyquinoline) in bland water-soluble bases or petrolatum. Rarely have we been unable to control infection with these two drugs, and the incidence of sensitivity is extremely low.

We next visited the plant to try to acquaint ourselves with the general layout and work done. An aircraft consists, essentially, of a chassis, around which the fuselage is built and on to which are attached the wings, controls and engine. The fuselage is made of aluminum which comes to the plant in large sheets. These are cut and shaped, either by hand or in hydraulic presses, and the parts are then riveted or welded together. Besides the large departments which manufacture and assemble the component parts, there is an assortment of smaller ones such as the plastic department, the paint shop, the heat treatment rooms and many others.

Initially, the largest number of cases came to us from those areas where the workers came in contact with oil. Lathe operators, for example, work with sleeves rolled up as a safety measure and their forearms become covered with cutting oil. Their trousers also become saturated, unless they wear protective aprons, and the oil comes in contact with the upper thighs. Oil produces folliculitis and boils, mostly on hairy areas, the arms, upper

thighs and back of the neck. It was noted early that these infections occurred on the arms in clean workers, and on the legs in the less clean. The clean worker was removing oil from his hands and arms by whatever method was easiest and with any or all materials available. These included soap compounds with abrasive components, organic solvents and alkaline soap the pH of which was found to be as high as 9.5. If substances which are very alkaline are used for cleaning over a long period, they tend to produce marked dryness of the skin, and remove the normal acid mantle, while the gritty compounds tend to make small abrasions into which infection is easily spread.

The problem here, then, was to find a substance which would remove oil easily without being too alkaline and, if possible, one which had an anti-septic quality. We found the answer in cetyltrimethyl ammonium bromide or cetrimide (Cetavlon). This powder is readily soluble in water and gives solutions which have powerful bactericidal as well as detergent properties. It is useful as a scrub in solutions as low as 0.05 to 0.1%, but for our purpose, where oil had to be removed, it was necessary to use a 1% solution.

One per cent cetrimide was supplied to all workers for whom folliculitis was a problem. This, of course, included the hairy types, the seborrhœic types, and those who never washed or changed their trousers.

All patients with boils were screened for systemic disease, such as diabetes, but none was found. Most cases cleared with the use of cetrimide and the stopping of adhesive plaster, boil dressings, poultices, etc. Adhesive plaster is probably the commonest cause of persistent boils. It is always distressing to see boils being chased back and forth on the back of the neck, each new one occurring in the area irritated by the last adhesive strip.

Another follicular disease, acne vulgaris, was commonly seen, as would be expected in a plant where the personnel is quite young, but we were unable to find any relation between acneiform lesions and the type of work done.

CONTACT DERMATITIS NOT A MAJOR PROBLEM

Before I came to the plant, I used to think of industrial skin diseases as being largely contact dermatitis, both allergic and primary irritant. It was quite a surprise, then, to find that this was not a major problem. The only substances which produced primary irritation to any extent were organic solvents, carbon tetrachloride, Varsol, turpentine, acetone and substances used to remove paint. The solvents are used to cleanse small parts, to remove traces of oil from electrical connections and to remove glues, plastics and grease from the fingers when doing fine work. The result is a drying and cracking of the fingertips, followed by

secondary infection and paronychia. We have not been entirely successful in eradicating this problem, but use of barrier creams before work has been started and SBS-30 for cleaning fingers has reduced the incidence of trouble.

We should make a plea here for the removal of carbon tetrachloride from industry, if it is at all possible. Not only is it toxic when inhaled and does it produce an extreme dryness of the skin, but it is also a very potent sensitizer. We had one man with a periocular swelling which baffled us for a long time before we found that one of his tasks was to clean electrical terminals with carbon tetrachloride.

Allergic contact dermatitis, caused by substances handled in the plant, was not common. In fact, dermatitis contracted from materials at home and at play was three times as common as that contracted at work. This is probably the place where dermatological training is of most value. In most places where we have shown improvement, it could be duplicated by anyone using good technique, but in the diagnosis of allergic contact dermatitis, one must be fairly sure of one's ground, if the worker is to be convinced that the condition is not due to his work, as he invariably believes in the beginning. We found a large number of cases of poison ivy dermatitis, nickel sensitivity from jewellery, sulfur dermatitis from matches, hand lesions due to detergents in women, and so on.

A girl we saw in the office had been receiving compensation for a dermatitis of the right thigh for three months. This condition got worse at work and improved at home. It turned out to be a sulfur allergy, caused by carrying kitchen matches in a smock she wore only at work.

Allergic contact dermatitis was usually sporadic except for one or two places in the plant, particularly the paint and plastic departments. These two areas required special attention, particularly in regard to ventilation.

Management of patients with acute contact dermatitis requires great care. Any skin which has become sensitive to one substance is, of course, much more apt to become sensitive to others than is a normal skin. It is essential that one see the case early—first, in order to see the distribution, which is of the greatest aid in diagnosis, and secondly, in order to prevent home medication. In cases where there is only redness, heat and itching, we often do nothing but wrap the area to give protection. If, however, the skin has become vesicular, moist and secondarily infected, we begin with saline compresses and 1% Vioform in a water-soluble base. The patient is always warned that if itching increases after applying the medication, it is to be washed off immediately and nothing more done until he is seen by the doctor. Almost without exception, our patients with a long history of compensation were those who had not reported

early and who received their initial treatment outside the plant. It was satisfying to find that, as time went on, fewer workers sought treatment outside the plant for cutaneous disorders.

Once the acute skin condition is controlled, we seek the help of the safety engineer, who endeavours to place the man in a job free of danger until his skin is well healed. He is then given a trial of work using protection, such as barrier creams or gloves, to see whether he can return to his original job or not. A practical point to note here is that a record should be made in the personnel department file of such sensitivities, so that allergic people are not transferred back to the same place after a year or two. We had one man who was sent to the paint department three times. The last visit lasted only half a day before he reported with acute swelling of his entire face.

There are several conditions which can be confused with contact dermatitis of the hands. Athlete's foot can produce a so-called "id" reaction in which small vesicles form in the interdigital spaces of the hands and which can only be cleared by treating the feet. A thought to the emotional side of the man may also uncover the cause of a hyperhidrosis which gives palmar vesiculation. Lastly, with hands which are always dry and very scaly, a biopsy or a general examination may reveal psoriasis as the cause. We find psoriasis much more often since we have been on the lookout for it.

An interesting entity for study in industry is the common wart. We have found that warts occur most commonly in areas where minor cuts and abrasions occur frequently. If this could be proved, it would make warts a potentially compensable condition.

A list of the principal causes of prolonged and recurrent industrial dermatoses includes:

1. Incorrect dermatological diagnosis. The conditions most often confused with industrial ones include nummular eczema, dyshidrosis, fungous infections, lichen planus and psoriasis.
2. Failure to find the correct cause of the eruption.
3. Failure to eliminate the cause in the case of primary irritants or to remove the worker from the job in the case of sensitivities.
4. Overtreatment or improper treatment.
5. Development of secondary infection.
6. Allowing patients to continue to use alkaline soaps when convalescent.
7. Poor selection of workers for hazardous jobs. Seborrhoeic individuals, for example, are not good risks for jobs where oil comes in contact with the skin, and blond types with dry skin usually do not withstand solvents well.
8. Development of multiple sensitivities during treatment.
9. Malingering, which is less common when jobs are hard to obtain.

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RÉSUMÉ

Les dermatoses professionnelles comptent parmi les causes les plus importantes d'absentéisme. Au Canada, le Département de la santé nationale et du bien-être estime que 1% de la population industrielle en est affecté annuellement. Dans ce domaine l'auteur relate son expérience tirée de l'exercice de sa profession dans l'industrie aéronautique. Le poste de dermatologiste consultant dans une grande avionnerie lui a conféré l'avantage de voir ces dermatoses dès leurs premières manifestations et avant qu'elles n'aient acquis de l'ampleur et de la chronicité ou qu'elles n'aient été aggravées par un traitement intempestif. Les soins précoces souvent prodigués sur place à l'atelier ont permis de réduire le nombre de jours d'absence (par 100 employés par année) de 19 en 1951, période témoin, à 0.54 en 1952, première année où ce service fut institué.

La formule adoptée par l'auteur dans l'organisation de ce service fut d'abord de confisquer des postes de secours tous les médicaments sensibilisateurs qui s'y trouvaient et de les remplacer par d'autres d'une efficacité équivalente mais sans propriété sensibilisatrice pour la peau. Au début

la majorité des employés venant consulter pour affections cutanées entraient en contact au cours de leur travaux avec une forme quelconque d'huile. En plus de causer des folliculites et des clous, l'huile présentait aussi le problème de ne s'enlever qu'avec des produits généralement très irritants (nettoyeurs contenant de la ponce pulvérisée, dissolvants organiques volatiles, savons à forte alcalinité). Cette difficulté fut tournée par l'emploi d'un détersif bactéricide, le cétrimide, en concentration de 1%. Les dermatites de contact loin de posséder l'importance qu'on a l'habitude de leur attribuer dans l'industrie ne se virent que rarement et surtout chez des sujets qui avaient à se servir de dissolvants organiques, tétrachlorure de carbone, térébenthine, acétone et autres décapants. L'emploi d'une crème à base de silicone a amélioré la situation sans toutefois résoudre le problème entièrement. Un certain nombre d'affections imputées au travail de l'usine étaient en réalité causées à la maison ou pendant les loisirs. Le bon fonctionnement d'un service de consultation dermatologique exige la collaboration de l'ingénieur préposé à la sécurité du personnel afin de diriger les malades sous traitement vers des emplois moins exposés.

INTESTINAL ANGINA AND
INFARCTION*

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IN THE PAST decade there has been a rapid and important development in the recognition and treatment of occlusive disease of the mesenteric arteries.

Before 1950 all the literature on the subject¹⁻⁷ consisted of post-mortem reports or surgical surveys interspersed by the rare clinical report of either survival after total removal of small bowel⁷ or recovery after no treatment at all.⁵ The outlook with extensive resection of the bowel was so gloomy that Williams⁵ stated that it was safer not to resect where either large bowel or wide areas of small bowel were infarcted. He advised that, with such findings at operation, the abdomen should be closed without definitive treatment, and reported three instances where recovery resulted from this type of management. Nevertheless out of a series of 554 cases collected by Moore⁴ in 1941, the mortality was 94% despite any of the current forms of management.

It seemed obvious that there was need for an "agonizing re-appraisal" of the classical treatment. In 1950, I was confronted with a patient who had acute complete occlusion of the superior mesenteric artery and whose abdomen lay open before me on the operating table.⁸ I had the choice of either performing a resection of bowel extending from the ligament of Treitz to the mid-transverse colon or, alternatively, doing nothing and closing the abdomen.

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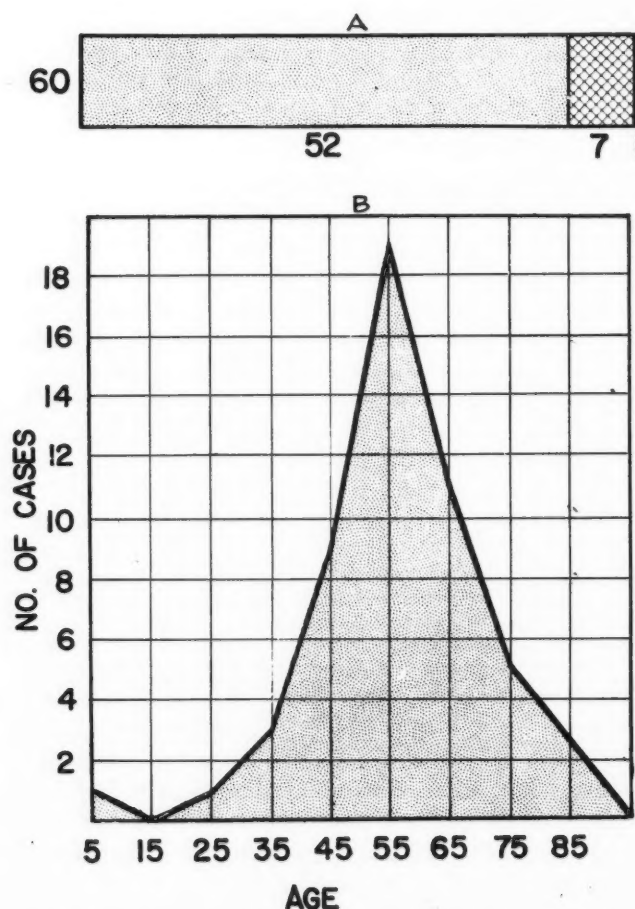


Fig. 1.—Incidence of acute superior mesenteric occlusion. (a) The bars indicate that out of a total of 60 cases, 52 were of persons with known cardiovascular disease. Seven were postoperative, and only one had no noteworthy predisposing factor. (b) The graph illustrates the sharp rise at the age of 55. If corrected for population the line would continue to rise after the age of 55, although not as steeply (after Johnson and Bagenstoss, ref. 6).

I chose neither course and instead dissected out the origin of the superior mesenteric artery, opened it and removed the obstruction. I repeated this procedure on another patient a year later. Neither

patient survived. The first one died from acute heart failure due to coronary occlusion; the second one died from intra-peritoneal hæmorrhage resulting from an excessive response to postoperative heparin. But it is significant that in both cases, post-mortem study revealed that the superior mesenteric vascular channels were patent and that the bowel in each case was entirely viable.

Thus it was established for the first time ten years ago that the surgical treatment of mesenteric vascular occlusion ought primarily to be directed toward the artery rather than to an assault on the gut.^{9, 10}

Since the report of these two cases there has been a gratifying change in the literature on this subject. Spearheaded by Robert Shaw^{11, 12} of Boston and followed by others,^{13, 16} there has been reported a series of successful cases following removal of obstruction from the origin of the superior mesenteric artery. What is even more exciting, attention has been focused on the sequelæ of partial occlusion of this important vascular network and important data have been produced, illuminating a corner of the dark and vexing field of recurrent abdominal pain. Furthermore, the surgical treatment of partial occlusions has become a distinct possibility.

It is appropriate at this ten-year mark to review the subject of complete and partial obstructions of the superior mesenteric artery.

COMPLETE OBSTRUCTION

Clinical Features

This is a dramatic clinical event which in most patients is not difficult to diagnose. Characteristically, it occurs in a person after the age of 50 who has well-known or easily recognizable cardiovascular disease: either as advanced atherosclerosis or as valvular disease. Frequently there is auricular fibrillation. Occasionally the catastrophe occurs after some type of abdominal surgery. The onset is arresting. From the first, the patient is obviously and gravely ill with abdominal pain, and there may be some immediate diarrhoea, often bloody. The abdominal wall is firm, not rigid, diffusely tender and not distended. Plain radiographs of the abdomen are generally read by the radiologist as negative but it is my experience that there is less than the usual amount of air in the bowels. The white blood cell count and the temperature are both moderately elevated.

This is the optimal time to make a diagnosis, and clinical experience with this type of case will make it unmistakable. After 24 hours when ileus predominates, and peritonitis threatens, and distended loops with fluid levels are seen on the roentgenogram, the outlook after treatment is distinctly worse, but there is still some hope. After 48 and certainly after 72 hours, when there are

multiple perforations in an infarcted gangrenous bowel, the prognosis is hopeless.

Treatment

The course is clear. Any patient, irrespective of the severity of associated cardiovascular disease, who is seen in the first 24 hours (or, in a less hopeful way, within 48 hours) should be forthwith sent to the operating room to have the superior mesenteric artery explored. In the field of abdominal surgery there is no greater emergency. The bowel wall can tolerate total ischæmia for 12 hours. After this interval inevitable necrotizing changes ensue which progress to gross gangrene in 72 hours. If the bowel is inspected very soon after onset—say within eight hours—one may be beguiled by a seemingly normal-looking colour with rather active though irregular muscular contractions. This is a trap—because this bowel, if circulation is not restored, will be dead in 72 hours. On the other hand one should not be dissuaded by bowel that is dusky or even grey in colour. Shaw¹² has described bowel that at first appearance was "black in about half its extent". Upon re-establishment of circulation this bowel proved to be viable.

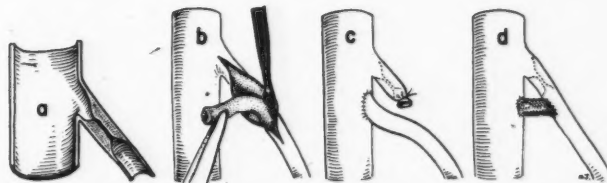


Fig. 2.—Diagram showing: (a) The atherosclerotic lesion beginning a few millimetres beyond the ostium of the superior mesenteric artery and ending about 2 cm. distally. (b) Removal of the obstruction by thrombendarterectomy. (c) Ligation of the superior mesenteric artery and re-implantation into the aorta. (d) The use of a prosthesis as a by-pass.

In all such cases the superior mesenteric artery must be exposed at its origin, and when pulsations are absent and the vessel is empty, it must be opened and the obstruction cleared until a brisk flow is obtained. It is indeed fortunate that the occluding element, be it an atherosclerotic plug or an embolus or a thrombosed aneurysm, extends down for only a few centimetres from the aortic ostium, while the rest of the superior mesenteric artery and its branches remain patent (Fig. 2). It is this fact that makes the operation technically possible. Heparin should be injected into the distal part of the artery at the time of operation and by carefully controlled parenteral injections post-operatively for the first day.

A careful watch is kept during the first 48 hours after operation. The viability of the bowel can be restored in nearly its whole extent by this procedure. One cannot, however, especially in the delayed case, be certain that the restoration will extend to every last square millimetre of the vast extent of involved bowel wall. Because gangrene persisting in a relatively minute area—in

one case, in the appendix¹²—may produce perforation with lethal peritonitis, it is best to exercise caution, and in any questionable case to re-explore the abdomen 24 to 36 hours after the obstruction has been removed. At this time if a localized segment of bowel has remained without blood supply it will be recognized and can be resected. Lives will be saved by this "second look".

PARTIAL OCCLUSION

Out of the renewed interest in the subject of mesenteric arterial occlusion perhaps one of the more widely stimulating results is the revival of the concept of intestinal ischaemia due to incomplete occlusive disease or to arterial spasm.²⁰ This logically completes the complex of "effort anginas": angina pectoris from coronary ischaemia; intermittent claudication from peripheral vascular ischaemia, and now intestinal angina from mesenteric ischaemia. There may be some quarrel with the term "intestinal angina". Some would prefer "mesenteric or abdominal angina" and others "intestinal claudication"—but the entity is soundly based, irrespective of the name.

Carucci,¹⁷ Derrick and Logan,¹⁸ and Mikkelsen¹⁹ have shown that atherosclerosis, a process notorious for its patchy distribution, has a preference for the intima immediately distal to the ostia of the main branches. They further demonstrated that the atherosclerotic process extends for only about 2 cm. down the mesenteric branches and furthermore that the peripheral portions of these important vascular channels are free of blockade (Fig. 2a).

Following upon these important contributions, Mikkelsen¹⁹ in 1959 reported the first successful operation for intestinal angina. By the procedure of thrombendarterectomy he cleared out the atheromatous intima from the ostium and the first 2 cm. of an almost completely occluded superior mesenteric artery. The patient was dramatically relieved of his attacks of abdominal pain and has regained his weight loss. In a personal communication to me, Dr. Mikkelsen has reported that 12 months after this procedure the patient was still free of pain and had recovered so much weight that he was now on a reducing diet. For the history of surgery this is a significant advance.

The Clinical Syndrome of Intestinal Angina

Ischaemia of the smooth muscle and of the absorptive tissues of the bowel becomes manifest in three ways—disturbance of muscular mobility thereby producing alterations in rhythm, disturbance of function resulting in one form of the malabsorption syndrome, and thirdly, the hallmark of muscular ischaemia everywhere, effort pain.²¹⁻²⁵

Just as with effort anginas generally, the pain of intestinal angina occurs with maximal work and is more severe after the largest meal of the

day. It is steady in nature with sharper peaks of colicky pain associated with disordered peristalsis. It is felt mainly in the periumbilical area and sometimes radiates through to the back. These are the referent areas for pain arising from any of the derivatives of the midgut loop.

The disturbance in bowel rhythm consists of four or five bulky loose stools occurring after a large meal, alternating with periods of comparative constipation. The stool on analysis will contain increased amounts of fat and undigested muscle fibres. This together with the nutritional disturbances will ultimately result in weight loss, anaemia and weakness. When associated with laboratory evidence of incomplete absorption of sugars, the diagnosis of "malabsorption syndrome" is usually made by the internist.

It is likely that with most surgeons this triad of abdominal pain, weight loss and disturbance in bowel rhythm, in a patient beyond 50, and in the absence of positive radiological signs, most frequently suggests the diagnosis of either occult gastro-intestinal malignancy or chronic pancreatitis. When by exploratory laparotomy neither of these diagnoses is supported, the internist may accept such cases as examples of "true" malabsorption syndrome.

It is possible that in the older age group an unknown proportion of those now labelled "chronic pancreatitis" or "malabsorption syndrome" and the more indefinite varieties of "abdominal migraine" or "irritable colon" may in actuality be cases of incomplete mesenteric occlusion with intestinal angina.

Treatment of Intestinal Angina

Out of the countless millions today who suffer from chronic recurrent bellyache, it is truly a formidable task to select those who may benefit from treatment directed towards the alleviation of intestinal angina.

Conservative treatment is, however, harmless and ought to relieve those with moderate degrees of ischaemia and will not injure the rest. Since both motility and absorptive capacity are taxed by large meals, the indication is for light meals at frequent intervals. Antispasmodic drugs and small repeated doses of codeine or *tinctura opii* will delay the rush of intestinal contents. Since arterial spasm²⁰ superimposed upon organic block may be a factor even in continued ischaemia, efforts to control this by nitroglycerin may be helpful both in relieving the patient and in supporting the diagnosis.

Surgical Treatment

Before surgical exploration is undertaken with a view to thrombendarterectomy of the superior mesenteric artery or to some by-pass procedure, the following three criteria must be satisfied:

1. A careful evaluation of the "total" patient, preferably by a meticulous internist with an interest in psychosomatic disease.

2. The combination of abdominal pain and weight loss must be sufficiently compelling to justify an "exploratory laparotomy", irrespective of the possibility of intestinal angina.

3. The patient should have other evidence of atherosclerosis or alternatively be in the age group where this disease is a distinct possibility.

For any real progress to be made in this new branch of abdominal surgery, it is of paramount importance that general surgeons, during abdominal exploration:

1. Be acquainted with the possibility of intestinal ischaemia and, in the absence of other manifest cause for the symptoms, be prepared to explore the superior mesenteric artery in order to evaluate its circulation. The key vessel is the superior mesenteric artery. A good blood flow within it will adequately compensate for occlusion of both the coeliac and inferior mesenteric vessels.

2. Become expertly familiar with the more common techniques of vascular surgery (Fig. 2). These techniques are not difficult but a warning should be stated: nowhere else can minor degrees of error or clumsiness by surgeon or assistant be so suddenly catastrophic.

CONCLUSIONS

With the proof that the relief of obstruction to arterial flow is as feasible in the mesenteric vessels as in other branches of the aorta, a new era of treatment has opened in the surgical relief of occlusive arterial disease of the abdomen.

The concept of intestinal angina merits further study and surgical treatment promises to give relief to some hitherto undiagnosed sufferers.

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RÉSUMÉ

L'auteur relate les circonstances dans lesquelles, il y a 10 ans alors que confronté avec une thrombose mésentérique découverte au cours d'une laparotomie, il décida de disséquer la mésentérique supérieure à son origine et d'enlever l'occlusion. Cette opération marqua un tournant dans le traitement chirurgical de cette affection. En guise de célébration de cet anniversaire, il offre un rappel de ce sujet. L'occlusion complète ne présente la plupart du temps aucun problème diagnostique. Elle comprend des antécédents vasculaires emboliques et, par la brutalité de son début, terrasse le sujet d'emblée. L'intervention doit être précoce puisque la situation ne tarde pas à devenir désespérée. L'intestin pourrait supporter une ischémie totale pendant 12 heures. Il ne faut pas se laisser décevoir par l'apparence du viscère. Une fois levée l'occlusion, on doit injecter de l'héparine dans les ramifications de l'artère en aval du thrombus. Le malade doit être suivi de près au cours des premières 48 heures. Si la circulation n'a pas été entièrement rétablie et qu'une petite aire de gangrène s'est produite, l'auteur préconise une ré-intervention 24 ou 36 heures après la première. L'étendue de la résection est alors considérablement moindre qu'elle n'aurait été au début et, en tant que telle, beaucoup mieux tolérée par le malade.

L'occlusion partielle évoque le concept de l'ischémie intestinale causée par un obstacle qui réduit la lumière du vaisseau ou par un spasme de l'artère. L'exérèse d'une plaque athéromateuse à l'origine d'une des sub-divisions de la mésentérique, comme l'a pratiquée Mikkelsen, peut supprimer totalement les attaques de douleur abdominale. Au point de vue clinique le syndrome dit de l'angine intestinale se présente sous trois formes: les troubles de la motricité musculaire causant une altération du rythme d'évacuation, les troubles de la fonction donnant lieu à un syndrome d'absorption défectueuse et enfin, la douleur à l'effort, qui se manifeste habituellement après le principal repas de la journée. Le diagnostic différentiel comprend le cancer de l'intestin et la pancréatite chronique. Le traitement médical est fondé sur une diète qui inclut plusieurs repas légers par jour et sur l'emploi de spasmolytiques. On ne doit appliquer le traitement chirurgical, qui consiste dans ces cas en une thrombo-endartérectomie ou en la création d'une dérivation quelconque, qu'après s'être assuré que le malade est vraiment un artérioscléreux et que l'intensité de sa douleur justifie l'intervention.

STRESS

It is difficult to define qualitatively or to measure quantitatively what might be called a pathological stressful event or situation. What is stressful for one person may be quite innocuous for another. A mouse or a spider may induce an acute state of stress in one human being while leaving another totally indifferent. A serious recession in Wall Street may cause such stress to a loser that he reacts by hurling himself from the twentieth story of a skyscraper; but many other losers react in much milder fashion. Whether a stressful situation produces a pathological reaction will depend on the vulnerability of the personality concerned, and there is nothing to prove that the human species has become less tough. As for the stresses of life, these are much the same as they always were, and are related to problems of food, shelter, disease, love, and the desire for prestige or power. There is no reason to believe that thwarted love, the pangs of hunger, or the loss of freedom are more poignant or more frequent today than they were in Assyria and Babylonia, Greece and Rome, in the Middle Ages, or during the nineteenth century. Indeed, many stressful factors have diminished both in frequency and in intensity. — I. Atkin, *Brit. M. J.*, 2: 1477, 1959.

ENCOPRESIS—PSYCHOGENIC SOILING*

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FÆCAL SOILING in children is often emotional in etiology. Soiling is a symptom easily noted by the child's peers and may quickly lead to social ostracism. The child who soils, or his parents, may feel great shame and may not mention the soiling during a routine physical examination. The pædiatric and psychiatric literature on soiling is unclear. Many terms have been used for the syndrome of soiling without organic cause. Weissenberg,¹ in 1926, coined the word "encopresis" for fæcal incontinence as a term analogous to enuresis for urinary soiling.

Over a three-year period we have seen a group of 15 children with the main complaint of encopresis. These children ranged in age from two to 12 years and all but two were boys. This relatively high incidence in boys has been noted by other authors.^{5, 19} Physical, radiological and laboratory studies in each child failed to show any gross abnormalities. In all cases a collaborative psychiatric study was made of the child and at least one parent, always the mother and frequently the father also. We have viewed this problem from a psychodynamic standpoint and have found it helpful in planning treatment and in estimating prognosis to subdivide the syndrome as follows:

1. (a) Primary infantile encopresis: The child has never been toilet-trained and persists in a pattern of infantile soiling. (b) Primary reactive encopresis: Here too the child has never been bowel-trained but soiling is caused by fæcal leakage in a syndrome of chronic constipation.

2. (a) Secondary infantile encopresis: The child, once bowel-trained, regresses under stress to a pattern of infantile soiling. (b) Secondary reactive encopresis: The child, formerly bowel-trained, soils but the soiling results from fæcal leakage and the child is basically severely constipated.

As with cases of enuresis, we have designated the illness as secondary if there was at one time normal bowel control, and primary if there has been no period when the child was bowel-trained.

THE BACKGROUND

The child's individual capabilities and development usually determine the age at which bowel training is started. Some infants, even in the first weeks of life, become most anxious and agitated before they have a bowel movement: they contract their gluteal muscles and cross their legs in an attempt to retain their fæces. Some very young children concentrate intently as their bowels move and, on completion, relax in overwhelming

pleasure. Certain infants become most upset if their clothing is soiled, whereas others wallow luxuriously in their fæces. The constitutional strength of instincts regarding bowel excretion varies greatly with the child.

In exchange for maternal love and affection, the child controls his excretory processes. He learns the complicated defæcation habits of his culture. Toilet training is usually begun about the time when the child is beginning to walk and talk. This is the age when the normally developing child begins to understand his increasing separation and independence from mother. He enjoys this independence and glories in its mastery. Any threat of re-engulfment or of loss of this independence may throw the infant into an acute panic. He tends to react, or in many cases over-react, to any challenge to his individuality. This is the period when the child normally shows negativism and stubbornness. The greater the tie to mother, the more the infant may have to assert his separateness by reactive negativism.

Some mothers are more comfortable and gain greater emotional satisfaction with their child as a dependent infant. Such mothers are ambivalent or, in some instances, overtly opposed to their child's gaining increased self-control and independence. Equally destructive to the child's developing personality is the mother who assumes control of his physical processes. Under these home conditions, the child has no incentive and often no opportunity to develop bowel control.²

Children who are mentally backward may lag in acquiring bowel control as they do other skills. In the study of 70 encopretic American children by Shirley,³ 21 were at an imbecile level. As Kanner⁴ notes, usually even an imbecile has stopped soiling by five years of age but parental neglect and defeatism may delay the acquisition of bowel control in feeble-minded children. In a family where there is no incentive to develop bowel control, even a child of normal intelligence may persist in a pattern of infantile soiling—each day he soils himself with one or several formed bowel movements. Such a patient is frequently enuretic also.⁵ These children are said to have primary infantile encopresis.

Under normal conditions, the older the child, the stronger is his personality structure. A young child, just bowel-trained, will regress to infantile soiling under the stress of an illness. Usually the older a child, the greater is the stress needed to produce such a regressive symptom. Where the child's personality development is inadequate, under the strain of family psychopathology, a lesser emotional assault may produce this profound regression. Marfan⁶ found encopresis to occur more often in French school boys with a heavy study program, while Schachter⁷ in Bucharest commented on the increased incidence of soiling in illegitimate children and in children less favoured in the family group. During the British evacuation of school

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children during World War II, Burns⁸ found an increase in the incidence of soiling. These factors, and many others cited,⁹⁻¹² merely indicate stressful personality development and difficult life situations; they would all tend to favour regression. Regression to the point of faecal smearing in children of above school age indicates personality fragmentation of psychotic proportions. We have found smearing of faeces only with psychotic children whom we have not included in this study. Children who regress under emotional stress to a pattern of infantile soiling are said to have secondary infantile encopresis.

When the mother tries to control completely the child's bowel function, the child, in a desperate attempt to maintain his independence and personality integrity, may react strongly and negatively by withholding. Such a child may show the syndrome described by Jekelius¹³ as "obstipatio paradoxa". These children have severe constipation that often results in abdominal enlargement with palpable faecal masses, rectal distension with faeces and usually perianal dermatitis. Soiling is caused by leakage of faeces. This syndrome has been variously described as constipation with incontinence,¹⁴ psychogenic megacolon,^{15, 16} pseudo-Hirschsprung's disease,¹⁷ and idiopathic or functional megacolon.¹⁸ The classic history in these patients, as noted by Richmond and associates,¹⁶ is of infrequent bowel movements, with defaecation in a standing or supine position, often with much grunting, and periodic huge stools passed spontaneously or with the aid of enemas, suppositories or digital removal. The clinical course in such cases is usually benign. These children have been repeatedly described as stubborn and negativistic. We have seen this syndrome in children as a reaction to maternal overcontrol, and we have diagnosed these patients as having reactive encopresis. Reactive encopresis may be primary or secondary. Secondary reactive encopresis usually begins with a regression to infantile soiling under stress, but thereafter the mother's overzealous attempts to control the child's bowel function result in a withholding reaction by the patient and the development of the syndrome of reactive encopresis.

From the children in our study we shall illustrate the various types of encopresis, some of the etiological factors, and the treatment approach we have found most successful.

PRIMARY INFANTILE ENCOPRESIS

Primary infantile encopresis occurred in only one case in our series.

CASE 1.—"I was not going to kill some little child to get him trained by three years. If I pry on this little mind, I will make it worse. I don't want to kill the child in doing it. I hope he will outgrow it." The mother of this 10-year-old boy explained thus why her son was not yet toilet-trained at the time of his examination.

The patient had been soiling since birth. In his early years he was raised mainly by his maternal grandmother and aunt; his mother had returned to work when he was one month old. The parents moved from the maternal grandmother's household when the patient was three years old and not yet toilet-trained. To the aunt, who at that time offered advice with regard to bowel training, the mother had replied, "You're not washing his things, I am." Now, at the age of 10, the boy had been having two formed bowel motions a day, soiling himself each time. Soiling occurred usually during the day and rarely at night. This had been the pattern for many years. His mother never chastised him. For a few months during his seventh year, he was made to wash his underclothes, but this had produced no change in his symptoms. The patient's responses in play interviews generally were rather stereotyped and unimaginative. He expressed no shame or concern about his soiling.

The father blamed the mother for the boy's soiling—"She babies him up all the time." Toward his son, the patient, the father had been brutal and sadistic and had repeatedly disciplined the boy with no apparent cause—"to show him who is boss". The parents had fought constantly during the marriage. The mother, seductive and theatrical during the psychiatric interviews, described how her "cold, domineering" mother had forcibly and repeatedly given her enemas until she was eight or nine years of age. The maternal grandmother was still extremely bowel-conscious, but the patient's mother denied that she had any pre-occupations with her own bowels. Although the boy was of normal stature and physical development, the mother repeatedly emphasized that the patient was small and immature—"He's so tiny, so babyish."

Comment.—This boy had no incentive to control his bowels. His mother felt more comfortable treating him as if he were a tiny baby. To her, bowel training was equated with killing. In the mother's mind, the destruction of her son would occur were he to control his bowel processes and develop normal maturity. The father had to show the boy that father was boss; he brutally curbed any show of masculine assertiveness.

The patient was taken in treatment with a kindly, supporting therapist who expected and approved of the boy's gaining control of his own bowels. Within a six-week period, soiling cleared and did not recur.

SECONDARY INFANTILE ENCOPRESIS

Two cases in this series of soiling patients were classified as examples of secondary infantile encopresis. These children had been fully toilet-trained but regressed to a pattern of infantile soiling under emotional stress.

CASE 2.—One month before the psychiatric evaluation, this three and one-half year old boy was hospitalized with severe burns over the lower part of the abdomen, the genitalia and the thighs, involving about 30% of his body surface. While at play, he had set fire to the family gasoline tank. In the hospital he had repeated blood transfusions and four skin-grafting

procedures. A psychiatric evaluation was requested because the patient was becoming increasingly withdrawn and uncommunicative. He had become enuretic and had started to soil his bed repeatedly.

When we first saw the boy, he cried continuously but otherwise lay motionless in bed. He was seen for supportive psychotherapy daily for almost two months until his hospital dismissal. His enuresis and encopresis cleared within a week, and he progressed to the point of undergoing painful changes of dressings without anaesthesia. Within the first week of therapy he revealed to the therapist his overwhelming fear and loneliness.

Both parents were very dependent on their own parents for guidance. The patient's mother, well-meaning but immature, told how she "babied" this boy, the youngest of her three children. She had raised her family according to instructions she had read in a magazine article. The father was shy and defensive; he admitted he drank too much too often, and that he tended to "fly off the handle" and spank his children excessively.

Comment.—An accident such as this would be extremely threatening to any child. It poses an overwhelming threat of annihilation. Hospitalization and the many medical and surgical procedures would be an emotional strain to any child. This patient showed inability to meet these stresses in his social withdrawal and regression to an infantile pattern of enuresis and encopresis.

The other patient with secondary infantile encopresis, a seven-year-old boy, regressed to infantile soiling when he was moved from a crib in the parental bedroom into a room of his own. He too had been "babied" and pampered. With support and encouragement, he also quickly recovered from his soiling. Immaturity and insecurity were the outstanding characteristics of these two patients. Their personality inadequacy, a reflection of the immaturity of their parents, caused them to regress to soiling under emotional stress.

Regression to infantile soiling in the face of emotional trauma is frequently seen in young children. Such patients are usually not seen by paediatric psychiatrists because the soiling is, in most cases, infrequent and soon clears. Where such soiling does persist, it usually indicates severe emotional stress, weak personality development, or both factors together. These children have once been bowel-trained and in response to meaningful support and approval from a significant adult (parent, general practitioner or paediatrician) they will regain bowel control.

PRIMARY REACTIVE ENCOPIRESIS

Much more frequent in our psychiatric referrals was the syndrome of primary reactive encopresis, which was present in seven of our 15 cases.

CASE 3.—"Whenever I give him enemas, I always need help to hold the pest down." As described by the mother, this four and one-half year old boy did not relish her controlling his bowels.

The mother, who brought 15 pages of notes with her, claimed that this child had been constipated since birth. When he was 10 days old, two days after arriving home from the hospital, the mother called the doctor because her baby could not have a daily bowel movement. From that time he was "chronically constipated". By the age of 11 months, according to the mother, the child would apparently hold the stools back—"He became very red-faced, grunted, and would cross his legs to prevent himself from having a bowel movement." He was then having a hard, firm bowel movement every three days. When the child was 15 months old the home physician dilated the boy's rectum once a day for a period of two weeks. This helped symptomatically for three weeks. The mother started giving the boy laxatives and castor oil each day when the patient was 18 months old. One month later enemas were prescribed by the home physician. Administration of these enemas gradually was increased in frequency; at the time of the psychiatric evaluation, they were being given twice a day. The child would soil between bowel movements, which occurred only once a week. He tended to defæcate in a standing position.

The mother had seen no need for a physical or psychiatric evaluation of the patient and had brought the child only at the insistence of the maternal grandmother. The mother repeatedly minimized the boy's symptoms—"The grunting and the soiling are only embarrassing when someone is at home." Concerning the four or five changes of underclothing per day, the mother said, "I am used to it."

The patient's mother was an only child. She described her own mother as a "cold disciplinarian" and always "bowel-conscious". She was much closer to her father, whom she constantly referred to as "my lamb". The patient's mother had very much wanted a girl for this, her first child, and was extremely disappointed in the birth of the patient. During the interviews she repeatedly referred to him as "the pest". The child had been an increasing behaviour problem for six months before this evaluation. He was stubborn and was liable to have temper tantrums.

The patient himself was a good-looking, curly-headed boy who related well to the interviewer. He tended to play by himself and refused to play with clay, describing it as faeces. He soiled himself during his play sessions.

Comment.—This boy's excretory processes had been manipulated and controlled since birth. His mother's hostility and destructiveness toward him were openly expressed. This mother consciously wished her child to achieve bowel control, yet she tried to prevent him from gaining control. She balked at physical and psychiatric examinations for the child; in many ways she appeared to gain gratification from the boy's symptoms.

SECONDARY REACTIVE ENCOPIRESIS

In the necessary psychological setting, secondary encopresis may continue in a chronic state, usually as secondary reactive encopresis. This occurred in five of our cases.

CASE 4.—Three years before her evaluation, this seven-year-old girl had an attack of cystitis with dysuria, bacilluria and diarrhoea. The urinary infection cleared within three months, but chronic constipation with recurrent faecal soiling persisted. She had chronic perineal irritation. When the initial diarrhoea developed, the mother started the practice, which continued to the time of the psychiatric evaluation, of washing and powdering the girl's perineum and genitalia several times a day. She also began the routine of going to the patient's school every lunch period to inspect the girl and change her panties. The patient developed the habit of pulling her panties backwards and forwards, thus creating perineal friction. Since the onset of chronic constipation, the mother regularly, several times per week, had given the girl laxatives, suppositories and enemas.

The patient was the youngest of three girls. The mother recounted a hectic marital career. Her first husband was institutionalized as a sexual sadist; the second, who married her bigamously, was a practising homosexual; the third husband, the patient's father, was another sexual sadist; her fourth and current husband was said to be a "gentleman". Her own father was also a brutal sadist and her mother a "stupid fool" and a "doormat for father". Her oldest daughter, the patient's sister, had undergone a course of insulin-induced shock treatments at the age of 16 years. The mother felt her middle daughter, 15 years old at the time of the interviews, was going to become a prostitute.

The patient herself was timid and obviously depressed. She lacked the sparkle of a normal child. She told how her mother "is only concerned with my B.M.'s".

Comment.—This mother, too, consciously wished her daughter to gain bowel control. Continuing bowel symptoms spurred the mother to increasing attempts to regulate the child's bowels. Nevertheless, the child was given the impression that her mother gained gratification because of the soiling; by constant and overzealous interest in the child's excretory habits the mother gave the girl to understand that soiling was expected of her.

DISCUSSION

Encopresis in a child reflects underlying family psychopathology. Many children soil because in this way they can gain approval from the significant parent. One parent, or both, may feel more comfortable with the child as a soiling, wetting infant. The young patient naturally tries to gratify the parent. The parents themselves need to be shown their own role in the symptom production. In many cases where there is an infantile pattern of soiling, the doctor, by acting as an approving, supportive parent-substitute, can give the child the necessary unambivalent warm encouragement so that normal bowel habits are established and soiling clears. In these cases extensive psychiatric treatment may not be required.

Reactive encopresis indicates more malignant family psychopathology. The maternal need to

control the child often poorly conceals her underlying hostility to the child who may be identified in the mother's mind with some hated parent, sibling or relative. Frequently it is obvious that the mother is encouraging the soiling in a subtle, although usually unconscious, fashion. The mother of one patient in our series had the habit of pulling open her son's pants and remarking, "Well, you haven't done it yet." Another mother, whose child had been under psychiatric treatment for four years for chronic reactive soiling, for one and one-half years insisted on taking the child's soiled clothing home from the hospital so that she might wash it herself; it was only after several interviews that she began to realize that she obtained emotional gratification from washing these soiled clothes. Vaughan and Cashmore at Guy's Hospital¹⁹ also noted that some mothers are "unwilling" to allow this symptom of soiling to disappear.

Many of these cases of reactive encopresis, primary or secondary, receive treatment of various kinds for many years without effect. Until it was recognized that most if not all of such cases require collaborative treatment of the mother and child, symptomatic cure was not usually forthcoming. Reactive encopresis is difficult to treat in general practice or ordinary paediatric practice and these cases are more readily treated in a child psychiatry centre. The family doctor must take care lest he be drawn into the family turmoil as a supplier of enemas, laxatives and suppositories to the mother for her assault and control of the child. By the time the child is seen, his antisocial mode of bowel excretion has usually become as automatic for him as normal bowel habits are for normally trained children. Retraining may be long and difficult.

SUMMARY

Encopresis, or faecal incontinence not caused by organic defect or illness, can be primary, occurring in children who have never been toilet-trained, or secondary, where it occurs in children who have been bowel-trained. Children who soil in a regressed infantile fashion usually gain a symptomatic cure in response to supportive, approving treatment. Such treatment can be well undertaken by a general practitioner or paediatrician. Reactive encopresis, on the other hand, indicates much more serious family psychopathology. These patients and their families require intensive and frequently prolonged treatment. This is usually best undertaken in a psychiatric setting.

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RÉSUMÉ

La raison pour laquelle l'enfant se souille est souvent d'origine émotive. Cette tendance à l'incontinence fécale a reçu le nom d'encoprésie. L'auteur a vu 15 de ces cas au cours d'une période de trois ans. Tous sauf deux étaient des garçons dont les âges s'échelonnaient de 2 à 12 ans. Aucun d'entre eux ne présentait de lésions organiques. Au point de vue psycho-dynamique l'auteur a adopté la classification d'encoprésie infantile primaire et secondaire et d'encoprésie réactive primaire et secondaire. Sont portés au groupe primaire les enfants à qui on n'a jamais enseigné d'habitudes de propreté; les autres, qui en ont contracté (même s'ils semblent les avoir oubliées), sont versés au groupe secondaire.

L'enfant peut chercher à contrôler ses excréments en retour de l'affection et de l'amour maternels. Cet entraîne-

ment doit commencer vers l'âge où l'enfant apprend à parler et à marcher. Ces premières manifestations d'indépendance envers la mère sont accompagnées de négativisme et d'entêtement. L'enfant arriéré peut tarder à acquérir ces habitudes et l'incontinence fécale ou urinaire n'est pas rare chez les jeunes débiles. Ces habitudes deviennent mieux enracinées avec l'âge, elles peuvent tout de même faillir en période de troubles ou de traumatismes émotifs. L'enfant qui résiste à cet entraînement peut réagir en manifestant de l'"obstipatio paradoxa" et refuser d'aller à la selle; l'incontinence fécale résulte de ce mégacolon psychogène.

Ce désordre ne reflète souvent que la psychopathologie du milieu familial. La mère qui se refuse à voir grandir son enfant et qui n'admet pas qu'il puisse un jour ne plus être un nourrisson s'expose à laver des langes et des sous-vêtements souillés pendant des années. D'autre part, le besoin de certains parents d'exercer un contrôle minutieux sur l'enfant, même dans ses fonctions naturelles, par l'entremise de lavements à horaire fixe, de purgations et d'autres manipulations du même genre, au lieu de n'apporter à ces choses que l'importance qui leur convient, n'est qu'une démonstration superficielle d'intérêt qui cache souvent la réjection de l'enfant par la mère. L'auteur cite quatre cas à l'appui.

LIQUID NITROGEN THERAPY OF
WARTS AND OTHER SKIN LESIONS*

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IN RECENT years liquid nitrogen has become readily available for dermatological therapy. The purpose of this presentation is to report on a study of therapy of verrucae and other skin lesions with this modality, to point out its practicability in dermatology and to describe the technique of application in these conditions.

Cryotherapy has been a useful method of dermatological therapy since the turn of the century. Liquid air was apparently the first agent used on the skin for refrigeration. In 1899, White¹ published an article on the properties and use of liquid air in medicine and surgery. In 1907, Pusey² recommended the use of frozen carbon dioxide in preference to liquid air, pointing out the practical difficulties in obtaining and storing the latter at that time. Solid carbon dioxide has remained a satisfactory method for treating certain types of skin lesions including certain hæmangiomata, some lesions of chronic discoid lupus erythematosus and some stages of acne vulgaris. Gold,³ in 1910, compared the use of liquid air and solid carbon dioxide, and found liquid air preferable in every respect except availability. Irvine and Turnaclyff,⁴ in 1929, related experiments with liquid oxygen and concluded that it was a more satisfactory substance for removal of warts than other methods. No subsequent reports of its use are noted until 1948, when Kile and Welsh⁵ reported

on the use of liquid oxygen and observed that it was effective in more than 1000 patients.

Good results with the use of liquid nitrogen in the treatment of many skin lesions were reported by Allington⁶ in 1950, and by Zeligman and Robinson⁷ in 1955. Since liquid nitrogen has become available it could be expected to replace liquid air and liquid oxygen as it does not support combustion, thus eliminating the fire hazard. Liquid nitrogen is an inert, odourless, colourless liquid with a temperature of -195.8° C. (-320.4° F.) and constantly vaporizes. Table I compares liquid nitrogen with liquid air, liquid oxygen and solid carbon dioxide.

TABLE I.

	Temperature	Ability to support combustion
Liquid air.....	-191.5°C. (-312.7°F.)	++
Liquid oxygen.....	-182.9°C. (-297.2°F.)	++++
Liquid nitrogen.....	-195.8°C. (-320.4°F.)	—
Solid carbon dioxide.....	-78.5°C. (-109.3°F.)	—

MATERIAL

The liquid nitrogen used in this study was obtained from a commercial source and collected in a litre thermos-bottle, the plastic cap and the cork being discarded and an absorbent cotton stopper used instead. It is important to stress that the container should not be tightly capped since gas must be allowed to escape in order to prevent pressure

*Read at the annual meeting of the Canadian Dermatological Association held in Montreal, June 1959.

from accumulating in the container. The vaporization continues constantly so that the material collected in a litre thermos-bottle lasts about 24 hours at ordinary room temperature, or slightly longer if the container is not unduly agitated. The thermos-bottle was enclosed in a box to prevent tipping and for transportation purposes. If a constant supply of the material is necessary, use can be made of containers holding from five to 25 litres that are now available. In the larger ones, evaporation occurs at a rate of about 5% of the volume in 24 hours.

METHOD

Liquid nitrogen is applied with cotton-tipped applicators. The size of the applicator varies according to the size of the lesion. For average-sized verrucae an ordinary cotton-tipped applicator is used. For minute lesions an applicator is made by wrapping some absorbent cotton about a wooden toothpick. For larger lesions more cotton is wrapped loosely on an applicator stick. The cotton-tipped applicator is dipped in the liquid nitrogen and then applied without appreciable pressure to the lesion. An assistant prepares a second applicator so that one saturated with the liquid can be placed intermittently on the lesion for long enough to produce blanching. The blanching should extend to a narrow rim around the lesion. A white solid frozen surface results immediately upon application of the liquid nitrogen. With experience, by removing and replacing the applicator, one can obtain the depth and width of freezing that is desirable. The required refrigeration is obtained in a matter of seconds with smaller lesions but over a minute is necessary in larger lesions. The time required also varies according to the thickness of the skin in the area being treated. Lesions on the palmar and plantar surfaces require more time. For treating verrucae planae use is made of a cotton dental roll which is held with a pair of curved forceps; after the roll is saturated with liquid nitrogen, it is passed quickly across the skin surface in such a way as to cause blanching of the plane warts before the underlying skin is so affected. In this way desquamation of the lesions occurs with only transient erythema of the adjacent skin.

OBSERVATIONS

A burning sensation is produced when liquid nitrogen is applied to the lesion. Since pain occurs when normal skin is frozen, an attempt should be made to apply the material only to the lesion under treatment and to a narrow rim about it. A stinging sensation that lasts for a few hours and is accentuated by pressure, follows the application. A blister may form within three days. This is more likely to occur in areas with thin skin and over joints. If a bulla forms, it can be opened but smaller vesicles should be allowed to desiccate.

If the freezing is deep, a hæmorrhagic bulla may result. A crust forms and drops off in less than three weeks. A dressing is not usually required but can be used to cover ruptured vesicles. In the treatment of a single verruca, one application is sometimes sufficient. If a further application is necessary, it can be given in three weeks. Three or more applications at intervals of three weeks have to be given in some instances. Scarring does not usually result from treatment by this modality, the cosmetic result obtained being superior to that which results from electrodesiccation.

On microscopic section of an area of skin to which liquid nitrogen had been applied 30 hours previously, Allington⁶ found a vesicle which had raised the epidermis cleanly from the dermis at the dermo-epidermal junction. The treatment then would seem to be ideal for epidermal lesions such as warts.

RESULTS

Good results were obtained in the treatment of over 100 cases totalling several hundred verrucae. The following types were included in this study: verrucae vulgaris, verrucae planae juvenilis, periungual verrucae and verrucae filiformis. In some cases numerous verrucae responded to one application; others required several applications at intervals of three weeks. Deep lesions usually required more than one application.

Many more lesions can be treated at one sitting than is customarily done by electro-surgery. In some patients, particularly children, one is limited in the amount that can be done at a sitting by the painful sensation that is produced when the material touches the skin. Many very large verrucae that would have been a problem to handle by any other method were satisfactorily treated with liquid nitrogen. Some lesions that extended the entire width of a digit were satisfactorily treated. These healed with good cosmetic results. Repeated applications were necessary for the larger lesions.

The results in the treatment of periungual warts are particularly worth noting because of the difficulty encountered in treating these lesions. In this series, of 36 periungual warts, 32 were successfully treated with liquid nitrogen. Treatment of the remaining four was discontinued before a satisfactory result was obtained.

The following conditions were also treated with liquid nitrogen: leukoplakia, nævus araneus, seborrhœic keratoses, keloids and hæmangiomata. The response of selected cases of leukoplakia to treatment with liquid nitrogen was satisfactory. The mucosal lesions were thoroughly frozen. Repeated applications are usually required to treat a patch of leukoplakia. Nævus araneus that recurred after electro-surgery responded to one application of liquid nitrogen. Seborrhœic keratoses usually respond to one application of liquid nitrogen,

and the ease of application for multiple lesions is again an advantage here. Keloids were treated with liquid nitrogen when the lesion was of an irregular shape, since greater ease of application was possible than with solid carbon dioxide. The same circumstances prevailed in the choice of liquid nitrogen over solid carbon dioxide in the treatment of certain "strawberry mark" hæmangiomas.

ADVANTAGES OF LIQUID NITROGEN THERAPY

The cosmetic result is excellent. Dressings are usually not necessary. Healing is rapid. The material is easily applied to irregular surfaces. The depth of refrigeration is readily controlled. Large warts can be treated without fear of sequelæ. Numerous lesions can be treated at one visit.

SUMMARY AND CONCLUSIONS

The practical aspects of the use of liquid nitrogen in the treatment of warts and other skin lesions are noted, and a review of the literature pertaining to cryotherapy in dermatology is presented. The technique of application is described, and our personal experience in the treatment of several hundred verrucae and other skin lesions is related.

Liquid nitrogen was found to be superior to other methods of therapy for verrucae vulgaris which were

either large, multiple or periungual. Liquid nitrogen was found to be a useful adjunct in the treatment of selected cases of leukoplakia, nævus araneus, seborrhoeic keratoses, keloids and hæmangiomas.

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RÉSUMÉ

On a récemment introduit l'usage d'azote liquide en cryothérapie dermatologique. Ce liquide se tient à une température de -195.8° C. dans des contenants dont l'orifice ne doit pas être hermétiquement fermé afin de permettre l'évaporation. Il est incombustible, inerte, incolore et inodore. On l'applique avec des tampons en badigeonnant la surface de la lésion sans presser jusqu'à ce que la peau blanchisse. L'application provoque une sensation de brûlure suivie pendant quelques heures d'une sensation de piqure. On voit bientôt paraître une phlyctène ou une bulle hémorragique. Le traitement peut être répété aux trois semaines si nécessaire. L'auteur en a fait l'essai dans diverses formes de verrues et plusieurs autres affections de la peau. Cette méthode de traitement produirait une guérison rapide et des résultats cosmétiques excellents.

Case Reports

"ACUTE LETHAL CATATONIA" TREATED BY HYPOTHERMIA

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WHEN KRAEPELIN first brought together a wide group of mental illnesses, calling them dementia præcox (subsequently changed by Bleuler to schizophrenia) and dividing them into the hebephrenic, paranoid and catatonic forms, to which Bleuler added a simple form, a great feat of descriptive psychiatry was accomplished and the practice of psychological medicine was accelerated as psychiatrists were able to recognize the features in common between the different groups and apply more specific modes of treatment in each type. Nevertheless, for all that they have in common, in many respects differences between the types continue to outweigh the similarities. This applies

particularly to the natural course of the disease in each type, thus varying the prognosis and response to treatment. The prognosis in the simple and hebephrenic forms is generally considered rather poor, and that in paranoid schizophrenia somewhat better, whereas catatonic schizophrenia has generally speaking the most hopeful outlook of all and in many attacks of this illness a spontaneous and complete resolution may be confidently expected provided the patient can be adequately supported in the meantime.

Despite this generally hopeful prognosis in catatonic schizophrenia, various authors have pointed out that this is not always so, that there is one particular entity whose abrupt downhill clinical course and poor prognosis have earned it the name "acute lethal catatonia". Because this subgroup of the catatonias is at such variance with the remainder, in which the response to conventional methods of treatment is generally rapid and complete, a considerable literature has developed since the original description by Calmeil in 1832 (cited by Aronson and Thompson¹). Calmeil drew attention to the stormy course of patients with catatonic excitement, passing into profound stupor, with terminal hyperthermia, and then sudden death, though characteristically at autopsy nothing was

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found to explain the hyperthermia and physical collapse that led to death. Patients suffering from severe catatonic schizophrenia may behave with a frenzy of overactivity which would seem to lead to terminal exhaustion and death, or they may pass rapidly into a profound stupor, death taking place after a variable interval in this phase; or the phases may alternate, but in all except the acute lethal catatonias the condition is eventually self-limiting. The exact cause of death in the many patients now reported in the literature with the syndrome of acute lethal catatonia has not been clearly established, but it is significant that in all the accounts death took place via a period of profound stupor passing into a terminal hyperpyrexia. Reports of death at 110° F. appeared in the earliest literature and the highest temperature compatible with survival was 106° F. in the case reported by Aronson and Thompson;¹ they also review the literature up to that time very fully and quote Stenback (1938, 1944 and 1946). No adequate explanation of the hyperpyrexia has so far been brought forward. Gottlieb and Linder⁵ concluded that in schizophrenics there seems to be a derangement of central heat-control regulation. This observation has not received the attention that it merits. Rather than an elevated temperature being simply a terminal event, catatonics often have a continuous moderate fever which is assumed by the clinician to be due to overactivity or tonic muscular contraction, dehydration or infection; yet which persists despite correction of these disturbances. It is only as the terminal stage approaches that the temperature ascends to extreme heights and by this time speculation about its origin is abandoned in the face of the imminent death of the patient.

This paper reports a patient suffering from acute lethal catatonia who was treated successfully by hypothermia. It is suggested that hypothermia, as described, is a safe therapeutic procedure which should find application more widely in psychiatry and perhaps largely replace insulin shock and E.C.T.

The patient, Mrs. R., 47 years old and white, was admitted to hospital on March 17, 1959. She had been in her usual state of health until three weeks before; at that time she was noticed to be somewhat withdrawn, quiet and preoccupied but otherwise normal. Her family doctor prescribed some sedation but she continued much the same until nine days before admission. On that occasion a friend found her standing stiffly in a corner of the room, mute and unresponsive. Her doctor advised rest in bed and changed the medication. The patient remained at bed rest for the remaining period of time, taking only very small amounts of nourishment. As she was making no apparent progress and her physical condition was deteriorating, she was admitted to the mental hospital under certification.

She had been married to a man 30 years older than herself; her husband had died approximately eight months before, but the patient did not mourn his loss at the time. She had two children, a boy of 15 and

a girl of four and a half, who was said to be enuretic and a behaviour problem also. The patient had had poliomyelitis at the age of two, which had left her with some permanent weakness of both feet. There were no other illnesses except that five years previously she had an episode somewhat similar to the present illness, at a time when she was living in a remote community. On that occasion she was mute for five days, remaining in bed and refusing food. Her husband would not permit a doctor to be called and the condition resolved spontaneously at the end of the five-day period; she had remained well since. Information about her normal personality indicated that she was an industrious, hard-working woman with little time for leisure or hobbies. Nevertheless, she had many friends in the community where she lived and was always thought of as being a good mother to her children, handling the younger problem child tactfully and firmly.

At the time of admission to hospital, the patient appeared toxic and ill. The admitting doctor noted that she was emaciated and dehydrated with a temperature of 102° F., pulse 106 and respirations 32. Next day (March 18) she was seen by both of us. At that time she was lying in bed, sweating profusely. Physical examination confirmed the bilateral foot drop with flexor plantar responses and wasting of the lower extremities with reduced reflexes. The patient's ill appearance was emphasized by a marked respiratory difficulty; the pharynx was partially filled with mucopurulent secretion which respiration seemed only barely able to pass, and she seemed unable to clear her throat or to swallow. Her mental state was one of almost complete loss of contact except that any attempt to communicate with or examine her caused a shrinking away and aversion, similar to a total withdrawal, in which the patient went into marked flexor spasm, turning away from the examiner and attempting to shut out any stimuli. A determined examination indicated, however, that despite her almost choking on her own sputum, as in the case described by Ferguson,⁶ she was perfectly able to cough and clear her pharynx and likewise could swallow small sips with kindly persuasion.

Fluids were administered parenterally to correct the dehydration and antibiotics were given for her respiratory infection which amounted to a tracheo-bronchitis since the lung fields were clear. Over the next three days, despite frequent sponging, approximately five litres of fluid parenterally, and adequate antibiotics, fever persisted, her temperature fluctuating between 101.4° F. and 104° F. Her white blood count was normal at the time of admission, allowing for the dehydration and hæmoconcentration then present, and the blood picture did not vary during the subsequent course in hospital. Repeated examinations did not disclose any explanation for her fever, which was eventually felt to be non-specific and related to her catatonic state more than anything else. Meanwhile, with continued fever, her physical state was progressively worsening and by March 21 (4th day after admission), her condition was fairly critical. At this point it was decided that E.C.T. should be attempted to try to abolish the catatonic process rather than wait any longer for an improvement in her physical condition which was hoped for from the more general methods. The patient was prepared beforehand with a subcutaneous in-

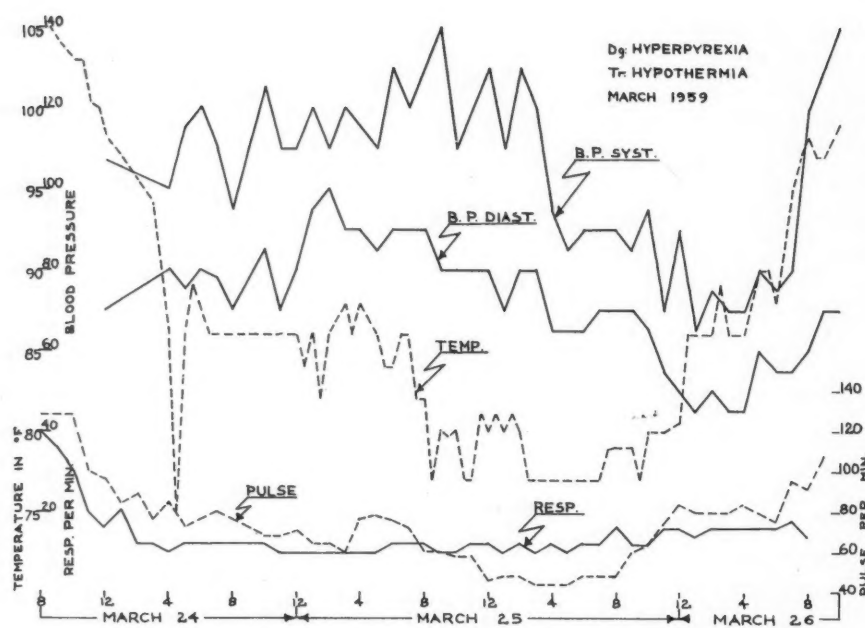


Fig. 1.—Patient's (Mrs. R.) chart. Diagnosis—hyperpyrexia. Treatment—hypothermia, March 1959.

jection of atropine grain 1/75, a Rahm machine was used, and immediately before the current was passed, an intravenous injection of about 15 mg. succinylcholine (Anectine) was given and when relaxation was obtained, a shock of 110 volts for 0.3 sec. was given. As there was no convulsion, the current was increased to 130 volts for 0.4 sec., again with no result. Finally, 130 volts for 0.5 sec. was used and two shocks at this intensity were passed in rapid succession. Again, there was no convulsion and by this time the patient's condition was so poor that it was decided that any further treatment that day was distinctly contraindicated. This contraindication appeared to persist in the succeeding days as her temperature continued to ascend and her general condition deteriorated. On March 22 her temperature was 105° F., pulse 132 and respirations 48 per min.; tepid sponging succeeded in reducing the temperature by one degree Fahrenheit for a brief period only. On March 23 a temperature of 105° F. was recorded and by this time her condition was extremely critical. It seemed that the normal process of heat regulation had ceased and that some central disturbance, of the heat-regulating centre itself perhaps, was forcing up the body temperature to a point where life would no longer be sustained. Later, on March 23, the temperature rose to 106° F. and in the early morning of March 24, 107° F. was recorded despite continuous sponging, electrical fanning and fluid replacement, antibiotics and other measures. By this time, she was mentally completely out of contact; the catatonic features of rigidity previously noted were replaced by an overall flaccidity associated with intermittent muscular fibrillations. At this point, it was decided that abrupt control of the disrupted temperature-regulating mechanism would be the most crucial factor in her survival, and that she must be treated energetically for the effects of heat stroke. One of us (A.G.) proposed the use of hypothermia by Laborit's lytic cocktail technique and it was commenced immediately. Meperidine 50 mg., chlorpromazine 75 mg. and promethazine 50 mg. were given intravenously and ice packs applied to most of the external body surface.

Two hours later her temperature was 100° F. and after an hour and 15 minutes more, was normal at 98.3° F. After this, the temperature continued to drop and a further two hours later it was 94.4° F. Thereafter, it dropped rapidly to 72° F., but this was considered too low in view of the danger of ventricular fibrillation, and the patient's temperature was allowed to stabilize in the region of 80° F. At this level, her pulse was fairly constant at 60 per min. and respirations were eight to ten per min. This state of affairs was maintained for 36 hours. The patient was then rewarmed by removing the ice packing, and the injections of lytic cocktail were spaced farther apart. During the period of refrigeration, the parenteral fluids were maintained and a daily total of 2000 c.c. Code 8 (2/3 of 5% glucose in 1/3 of normal saline) with crystalline insulin 20 units, ascorbic acid 500 mg., hydrocortisone as the sodium succinate ester (Solu-cortef, Upjohn) 100 mg. and calcium gluconate 2 g. was maintained through a venous cannula. In addition, penicillin, two million units intramuscularly, and chloramphenicol, 500 mg. twice daily, were administered throughout. After the cessation of refrigeration, her temperature made a rebound swing to 101° F. for about 18 hours and then subsided spontaneously to normal levels, where it thereafter remained.

Figs. 1 and 2 illustrate the patient's temperature and vital signs during the hypothermia period. Electrolyte levels of the same period are tabulated separately.

During the time the patient was refrigerated, her mental state was one of profound stupor. She would respond to verbal and tactile stimuli but in a non-purposeful manner. Yet the nurses reported she was able to co-operate in nursing procedures from time to time.

On March 27, at a time when her temperature was 101° F., she still appeared to be in a stuporous state in which catatonic negativistic features continued to be present. Thus, there was marked trismus-like clench-

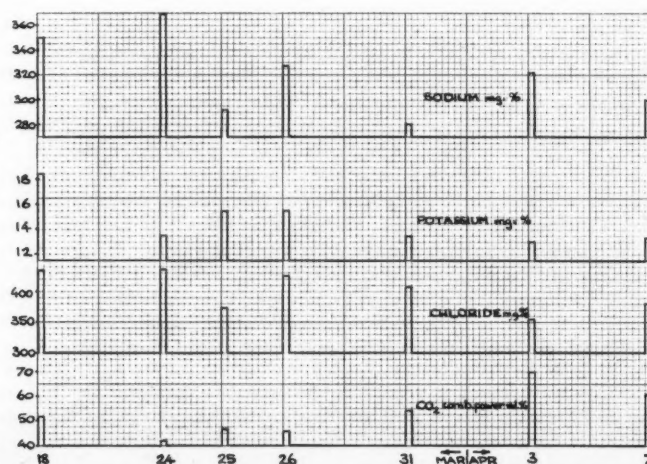


Fig. 2.—Graph showing electrolyte balance.

ing of the jaws on attempts to examine the mouth; resistance to limb movements had returned, although this was by no means as marked as in the period just after admission; and the patient would not communicate with one of us (K.J.F.), although showing at other times, with the nurses, attempts to speak in which she would mutter a few words incoherently. From that time onward, her temperature gradually adjusted to normal levels.

On April 2 she was interviewed at some length by K.J.F. During this examination, she lay in bed and frequently passed into sleep for brief periods. While awake, her level of awareness seemed much impaired and her span of attention was about 10 to 15 seconds. Spontaneous speech was limited to two almost incoherent phrases. Even though awake, the patient appeared to pay sparse attention to questions, except to ask them to be repeated, and thereafter still did not respond. These features were thought to be strong evidence of negativism because immediately after the end of this interview the patient's brother visited, and the patient was observed sitting up partially in bed with mobile facial expression and apparently taking part in the conversation. Later that day, because it was felt that further confirmatory evidence for the diagnosis of catatonic schizophrenia was needed, an intravenous sodium amobarbital test was performed. Approximately 2½ gr. (16 mg.) sodium amobarbital was injected initially and with this quantity the patient passed immediately into an anesthetized state in which her lower jaw dropped and had to be supported, otherwise respirations would have been completely obstructed. She was quite unrousable and her level of consciousness did not improve until two hours later, by which time she spontaneously awakened. It was felt that this result with intravenous sodium amobarbital was greatly against the diagnosis of catatonic schizophrenia, and a renewed attempt was made to identify a localized lesion of some general process that could be responsible for her illness so far. Neurological examination was negative except for the features already described, noted at the time of admission and due to past poliomyelitis. Spinal fluid examination, E.E.G. and skull radiographs were all normal. A pneumoencephalogram performed successfully on a second attempt was likewise normal. Serum tests for increasing titre of significant viral antibodies were not informative and an insulin tolerance test was within normal limits as well.

Meantime, however, she was showing continued general improvement. Her temperature remained normal and by April 4 the drowsiness previously noted had largely disappeared. This was replaced by apathy and dullness on formal questioning, though she would smile when encouraged. The patient would not perform simple calculations or attempt to answer questions on general information; but she was now aware that she was in hospital, and spent much time examining her hands and arms with an affect of perplexity. By April 8 she had improved markedly in that she was more alert, talkative and friendly than at any time since admission. She could remember visits of friends and relatives during the previous day or two, but had a complete amnesia for the period of her illness stretching back for an indeterminate time into the past. At this time, when told how long she had been in hospital, she would promptly forget. Her mood improved and became at times one of euphoria and foolishness. On

April 11 her attention and concentration amounted to her being able to remember five digits forward and two in reverse, but simple calculations of arithmetical addition involving more than one-digit numbers could not be performed. There was no nominal aphasia, however; no features of right-left disorientation; stereognosis was normal, and no other bedside tests for cortical impairment of function that were performed indicated any definite abnormality.

From this point she continued to make steady general progress. Her brother visited and reported that she now seemed as well as normal, though somewhat tired. The main therapeutic task became one of mobilizing her, first to sit up out of bed and then attempt to walk slowly, but progress was very slow because of the residual poliomyelitis leg-weakness which had become much emphasized by her long period in bed. She was eventually allowed on May 7 to go home and has carried on normally there since.

DISCUSSION

Hypothermia as a distinct mode of treatment has an obscure beginning and was probably first used to treat cases of heat stroke occurring in the tropics and in other hot and humid environments, the aim being to secure a decisive lowering of the body temperature for a period of time because part of the syndrome seemed to be due to a paralysis of the heat-regulating centre. Cases have been reported in the literature from time to time in which hyperpyrexia from other causes has been counteracted by hypothermia therapy; typical of the encouraging results obtained is the case mentioned by Matson of Boston: this report is appended to a paper by Reeves and Lewis.⁷ In Matson's case, a patient suffered brain-stem contusion, and passed into a state of hyperpyrexia and decerebrate rigidity. Cooling to 90 to 92° F. abolished the rigidity, which would reappear again at 95 to 96° F. Hypothermia was maintained for two weeks and the patient made an excellent recovery from what would apparently have been a fatal condition. In recent years, anaesthetists and surgeons have made extensive use of hypothermia procedures for cardiac and arterial surgery. The advantages are that the basal metabolic rate and oxygen consumption are reduced because of the reduced tissue demand,⁸ and patients can survive with a greatly diminished urinary output without a rise in the blood non-protein nitrogen level.⁷ However, Knocker experimented with profound hypothermia on dogs and found that significant histological changes took place in various organs, such as fatty infiltration of the liver, adrenals and kidney, and depletion of liver glycogen. She felt that these changes indicated a severe reaction to oxygen deprivation, rather than an intrinsically lessened demand by the tissues themselves; in view of these changes, she reported hypothermia to be a potentially dangerous technique. On the other hand, the changes described are similar to those noted by Selye⁹ as part of the alarm reaction, a non-specific effect of stress. In the latter view, in certain types of collagen disease,

the excessive generalized non-specific bodily reaction to stress may bring about more pathological results than the initial external stress itself. This led Laborit¹⁰ to offset the bodily responses to stress in an elective procedure by autonomic blockade; the "lytic cocktail" was compounded of promethazine, chlorpromazine and meperidine. The use of this has enabled hypothermia to be applied more precisely as a technique and this is now standard anaesthetic practice when hypothermia is used. Autonomic blockade abolishes shivering and permits smooth reduction in temperature, balanced maintenance at whatever reduced temperature level is required, and a smooth warming-up period.

Results of psychiatric cases treated with hypothermia have appeared in the literature over the last few years. Opinions of the value of hypothermia range from those of Goldman and Murray,¹¹ who were "invariably disappointed", to Talbott and Tillotson,¹² who reported "persistent modification of the mental picture". More recently, other authors¹³⁻¹⁵ have presented more encouraging opinions. All of these latter groups of workers used hypothermia with autonomic blockade in some form, whereas the poorer opinions of hypothermia seem to have been based on material in which thiopental alone or thiopental and succinylcholine were used and these did not prevent intense shivering,¹⁶ and therefore a stress response. Further, the duration of the hypothermic period showed wide variation in the literature quoted. Hoen, Morello and O'Neill¹⁶ in their personal material quote 3.9 hours below 90° F., whereas Talbott and Tillotson¹² attained 7 hours below 80° F. Another variable that has to be taken into account is the nature of the clinical material used; thus the poorest results have been obtained in patients who have been in hospital for many years whereas in more florid and recent varieties of illness, response to hypothermia has given rise to enthusiastic reports.¹³

In assessing the worth of a new mode of treatment, it is necessary to distinguish the natural course of the illness. In psychiatric conditions, illnesses may, for this purpose, be divided into three categories: first, those in which the clinical course runs spontaneously to complete recovery; second, those which after a variable interval remit and recover but with residual symptoms and deficit of personality; and third, those in which the clinical course is inevitable chronicity or death. An example of the second group is paranoid schizophrenia and examples of the third are hebephrenic schizophrenia, G.P.I. and, as in the case reported by the present authors, acute lethal catatonic schizophrenia. Treatment that works only in the first group of patients is of doubtful validity, treatment that influences progress in group two is probably a valuable addition to the therapeutic range, and treatment effective in the third group is likely to be specific for that condition.

Our patient, Mrs. R., was treated with hypothermia according to the technique of Laborit.

The success of treatment in this otherwise lethal disorder is felt by the authors to have been the result of effective body cooling maintained for a period long enough to counteract thoroughly the disordered inner thermodynamics and permit, at the end of this, a revived heat-regulating centre to recover its normal functions. Stress was effectively avoided and thus the dangers cited by Knocker were averted. As far as we are aware, the temperature levels reached by our patient are the highest recorded compatible with survival in this syndrome. Although the patient suffered a transient Korsakoff syndrome, owing in all likelihood to the sustained hyperpyrexia, she made a good eventual recovery in all respects. We are impressed by the relative ease with which the temperature and general clinical condition can be controlled in what is otherwise, from the nursing point of view, an almost unmanageable condition. Hypothermia by this technique would seem to have an application in a much wider range of psychiatric disorders, especially in those where administration of massive doses of ataractic or sedative drugs, or the use of E.C.T. and insulin shock in a physically poor-risk patient, would previously have been the only alternative treatment.

SUMMARY

A case of acute lethal catatonia is described. The literature of this condition and also of the use of hypothermia in psychiatry is reviewed. It is suggested that hypothermia with autonomic blockade should be applied to a wider range of psychiatric disorders, particularly those in which gross behavioural and psychic disturbance would otherwise demand large amounts of medications, dangerous to patients severely debilitated.

We wish to thank Dr. T. G. Caunt, medical superintendent, Provincial Mental Hospital, Essondale, B.C., for kind permission to publish information on this patient under his care, and we acknowledge with deep gratitude the devoted and unremitting nursing attention given throughout by Mrs. M. Bidwell and her nursing staff.

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A CARCINOID TUMOUR IN A RECTAL POLYP

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THE TERM "carcinoid" was first introduced by Oberndorfer¹ in 1907 to describe this peculiar tumour of the appendix. Since that time the tumour has been found in the stomach, gall-bladder, small and large bowel, and Meckel's diverticulum. The behaviour of the tumour varies with its location. In the appendix it is more often benign, and only 4% are said to be malignant.² In the small bowel 20-40% are found to be malignant and here it is very often multiple.^{3, 4} Spread is to the regional lymphatics, the liver, and adjacent peritoneum. The clinical picture of malignant carcinoid syndrome is too familiar to require comment.

Carcinoid tumours of the rectum behave much like those of the appendix, and are relatively benign. They occasionally metastasize to the liver, and they do recur. The tumour may present as a nodule, polyp, annular constriction, or as a plaque. Most rectal carcinoids are asymptomatic. The treatment of the benign tumour is adequate local excision. For the malignant form, or for large annular growths and those which recur, a more radical operation is required. The following case is reported in which a benign carcinoid tumour occurred in an adenomatous polyp of the rectum.

Mrs. M., 38 years old, when first seen gave a history of a lump that had been felt in her rectum on a routine examination. She had no complaints, and functional enquiry revealed no rectal symptoms. On physical examination she was found to be healthy and with no pathological findings apart from the rectal ones. On digital examination one could feel a mobile, lima-bean-shaped nodule on the right side in the lower rectum. This felt extremely hard to the touch and there was no blood on the examining finger. Proctoscopic examination revealed the nodule to be situated at the tip of a polyp which was approximately one inch long. The polyp was situated at nine o'clock (patient in lithotomy) about one inch above the anorectal junction. The base of the polyp was clean and there was no induration or bleeding. Sigmoidoscopy and barium enema did not reveal further polyps.

At operation the growth was removed by excising the base. A primary closure of the mucosal defect was then carried out. On splitting the specimen, the tip of the polyp contained a hard white nodule. There did not appear to be any involvement of the pedicle. The pathologist reported an adenomatous polyp of the rectum containing an apparently benign carcinoid tumour.

At postoperative follow-up, the operative site was well healed.

SUMMARY

A case is reported of an asymptomatic benign carcinoid tumour occurring in a rectal polyp.

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25 John Street,
Port Hope, Ontario.

Special Article

SUGGESTIONS FOR THE TREATMENT OF BURNS

Burns Committee, Kitchener-Waterloo Hospital,
Kitchener, Ont.

THIS OUTLINE is meant to be helpful in the general care and supervision of burn treatment. It is not the sole recognized standard of procedure, but it is the hope of the Burns Committee that uniformity and standardization will be of aid, particularly in the handling of any mass casualties.

TYPES OF BURNS

Electric—Especially note if the patient created the "short". Necrosis of tissue can happen at depth at entry and exit, and in between.

Steam and scalds—The greatest causes of burns in young children.

Fire—In school children fire burns predominate.

Caustic—Acid or alkali.

Others—e.g. Friction, radiation.

AGE

0-14 years 51% burn required to kill 50% of patients.

15-44 years 40% burn required to kill 50% of patients.

45-64 years 23% burn required to kill 50% of patients.

Over 65 years 9% burn required to kill 50% of patients.

FIRST AID MEASURES

If a caustic, wash the area for a prolonged period with copious quantities of water.

Relieve pain.

Give stimulants, make comfortable, etc.

Cover burns with clean covering, e.g. sheet, towel, or handkerchief.

Treat complications, e.g. fractures, respiratory distress, conjunctivitis.

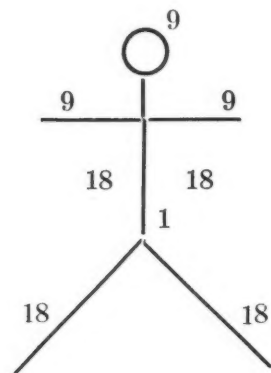
EARLY GENERAL CARE OF BURNS

Burn shock—Primary shock is of short duration.

Secondary shock is often present or imminent when the severely burned patient is first seen by the physician. Burns involving partial skin thick-

ness or full thickness are estimated according to body surface. If 10-15% of body surface area is involved in burn it will give rise to signs and symptoms of secondary shock, and should be treated in anticipatory fashion. In the very young and the very old, err on the side of caution.

A simple formula for estimation of burn surface area is the Rule of Nine.



The treatment of shock is necessarily directed towards maintaining normal blood volume and concentration. The more common error is to give too little, too late.

The Evans formula consists of 1 c.c. of blood plus 1 c.c. of electrolyte solution per kg. body weight for each per cent of body surface burned (plus normal water requirement—approximately 2000 c.c. daily for an adult). Half of the estimated requirement may be given the first eight hours, the other half to be given during the next 16 hours. About half of the value is given in the second 24 hours.

For example: A 75-kg. adult with a 25% body surface burn should be given 1860 c.c. of blood plus 1860 c.c. normal saline and/or Ringer-lactate solution, plus 2000 c.c. water by mouth (or 2000 c.c. 5% glucose in water, intravenously).

Comments on the Evans formula

(a) The formula is not applicable if the burn involves greater than 35% of the body surface. For such burns, limit to 35% of the total fluids estimation, then adjust according to other considerations as stated below.

(b) Urine output, 25-50 c.c. per hour.

(c) Blood pressure (above 100 mm. Hg); pulse and haemoglobin readings (below 100/min. and 100% respectively).

Pulmonary oedema may result from over-treatment in the very young, the very old, and those in respiratory distress.

Other Measures

Other measures to combat shock include the alleviation of pain by cautious administration of narcotics; avoid chilling the patient; administer adrenocortical extracts if indicated.

N.B. Provide free airway: tracheotomy if necessary.

Take care of the superficial veins.
Encourage oral intake of fluids.

Control sepsis by cleanliness and early antibiotics.

Prevention of tetanus and gas gangrene should be considered, using antisera, or toxoid boosters preferably, for tetanus.

Immediate or early operation on patients with widespread serious burns can be fatal. Operation should be postponed until the shock phase is mastered.

The Postburn Phase

This period begins when the initial shock is over; it lasts until the patient is healed.

Superficial burns present minimum problems. If they are kept clean, they will heal.

Deep burns require removal of the slough, and preparations for grafting and getting grafts to take. If less than 15-20% body surface is involved, and the patient is not too old, early excision (on third or fourth day) and grafting (fifth to seventh day) can sometimes be done. In larger burns, staging may be required but the sooner the whole procedure is completed, the better it will be for the patient and everyone concerned.

Other measures to consider in the postburn phase:

Fluid and electrolyte balance.

Blood transfusions are needed to maintain haemoglobin and serum protein levels within a "normal" range.

Diet: Adult patients with large burns require phenomenal amounts of food; it is not uncommon to see one who will require from 7000 to 8000 calories per day merely to maintain his weight level.

EARLY LOCAL TREATMENT OF BURNS

Principle

Minimal debridement. Do not sacrifice live tissue.

METHODS

(a) *Open air or exposure treatment* may be considered particularly applicable to burns of one surface, e.g. front of chest, and to burns involving the perineum or other areas which are difficult to bandage. The patient is placed between clean, preferably sterile, sheets—the top sheet being held off the patient by a cradle. With children it is more practical to convert the crib into a walled tent. Care must be taken that the patient is kept warm. Do not add to the hazard by incorporating a heat lamp. Masks should be worn by attending personnel, and the patient nursed by isolation technique "in reverse". Various antiseptic powders, sprays, etc., are sometimes used to aid formation of the coagulum, which usually forms in about three days. The membrane or slough of deep burns should be surgically removed the third week. Grafting usually cannot be done then. As a routine it is better to apply wet or wet-to-dry dressings (e.g. saline, dilute hygeol compresses) for two or

three days, for granulations to grow, and then go ahead with the grafting. Staging will be necessary in extensive burns.

Criticism: Deep burns form a heavy coagulum and infection may become extensive beneath it, resulting in increased depth of tissue loss.

(b) *Occlusive pressure dressings*—After debridement, which may consist only of cleansing, the initial dressing consisting of fine mesh grease gauze (tulle gras such as Petronet, Carbnnet, Jelonet) is placed next to the wounds and covered by a thin layer of ordinary surgical gauze, cotton waste, and layer gauze and cotton pads: the whole is wrapped with gauze rolls or flannel bandage and secured by plenty of adhesive, wound in spiral fashion.

The second dressing is done whenever the first dressing becomes dirty or loose, often five to eight days after the initial dressing. As in the first dressing, the work is carried out in the operating room by choice, under light anaesthesia and the usual sterile precautions. Any coating of serum is washed off; new blisters are trimmed; any slough should be removed as rapidly as the patient's condition will tolerate either at this dressing (preferably under tourniquet for an extremity), completely or partly, or delayed, as necessity demands. Active surgical excision is included and blood loss should be minimized by some method (tourniquet, compression, etc.) as well as being replaced. The second dressing is similar to the first, unless wet dressings are instituted. Wet-to-dry dressings should be soaked off.

Dressings should be changed as frequently as necessary to keep the wound clean and the likelihood of infection minimal.

IMMEDIATE EXCISION OF BURNS AND SKIN GRAFTING

The necessity for immediate excision of burns and skin grafting is quite limited. The first problem is to judge the correct depth of the burn in all its portions. Large burns should not be treated by this method.

EARLY EXCISION AND GRAFTING OF BURNS

Early excision and grafting of burns is applicable in some cases to deep burns. An occlusive pressure dressing is applied for two or three days. If the burn is not extensive and the patient has recovered from shock, at the end of two or three days the exact depth will usually be apparent. At this time the dressing is opened for inspection and if there are areas sufficiently deep to require grafting, the patient may undergo operation for removal of the slough; after two or three days further, these areas are ordinarily ready to graft.

Homografts may be applicable and should be considered. The usual source will be skin banks, as well as the mother, whose blood compatibility seems to aid in prolonging the adherence of the graft.

Surgical consultation is advisable early in all major burns. This is so that effective planning and staging of treatment may be carried out.

SUMMARY OF TREATMENT FOR MASS CASUALTIES

Admit major or complicated burns. Treat all others on an outpatient basis. Any person—especially the young and the old—with burns of over 10% of the body surface has major burns. Estimate area of burns by the "rule of nine".

Treat shock first. (1) Relieve pain, discomfort, and cold.

(2) Cover burns with clean covering: shirt, sheet, towel, handkerchief.

(3) Treat complications, e.g. fractures requiring splinting, respiratory distress which may require tracheotomy; conjunctivitis.

(4) Give fluids by mouth and intravenously according to the Evans formula: (a) blood, plasma or plasma-expander—1 c.c./kg. body wt./% surface burn/24 hours; (b) electrolyte—1 c.c./kg. body wt./% burn/24 hours; (c) 2000 c.c. glucose in water or water, orally). Modify according to age of patient (the very young and very old); keep the urine output between 25 and 50 c.c./hour, the blood pressure above 100, and the pulse and haemoglobin readings below 100/min. and 100% respectively. Reduce fluids by one-half for the second day.

Control sepsis by early use of antibiotics; use tetanus toxoid or antitetanus serum. All major burns should be treated with antibiotics, and prophylactically for tetanus.

Primary dressings after cleansing and minimal debridement under anaesthesia or narcosis. An inner grease gauze dressing, an outer gauze, and clean waste for bulk should be applied, and the whole wrapped with clean bandage rolls of any sort.

Primary exposure treatment, if pressure of circumstances warrants, necessitates:

Cleansing and minimal debridement.

Warm surroundings. Use a cradle and avoid further burns from the use of a heat lamp.

That children be walled and tented in a crib.

Nursing care.

Further treatment of mass casualties should follow the outline in principle. If the number of casualties is of such extent that evacuation of casualties for further and definitive treatment is anticipated, occlusive pressure dressings are preferable to exposure treatment. On the other hand, if dressings and material for dressings are in short supply, exposure treatment should be used. Boric acid ointment, sulfonamide ointment and tanning agents have no place in major burn therapy.

Burns Committee: May 1959, Kitchener-Waterloo Hospital.
G. G. Lippert, M.D., F.R.C.S.[C.], Chairman
Martin Scheurle, M.D.
J. E. Thompson, M.D.

(This outline is also approved at St. Mary's Hospital, Kitchener.)

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THE CANADIAN MEDICAL ASSOCIATION
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(Information regarding contributions and advertising will be found on the second page following the reading material.)

REHABILITATION IN MOROCCO

We are becoming accustomed to moving groups of people about the world by air; we are also taking for granted rehabilitation—a word not even used ordinarily until less than two decades ago—in cases of disaster. But even this familiarity does not quite remove the fascination of the rapid and masterful achievement in the rehabilitation scheme carried out and still in operation in Morocco for the assistance of thousands of Moroccans suffering from poisoning with a detergent component of old motor oil. A preliminary report on this was given in our January 16 issue.

The outbreak was quickly traced to the adulteration by unscrupulous traders of cooking oil commonly used by the poorer population, with surplus detergent aviation motor oil. When the first cases of poisoning were reported in the cities, warnings were sent out to destroy the oil, but some of the traders merely shipped it to remote country areas and sold it there. Some of the traders have been jailed and will probably be executed but meanwhile the Moroccan government was faced with the sudden problem of about 10,000 paralytics, many of them quadriplegics.

The government of Morocco and the Moroccan Red Crescent Society appealed for help to the League of Red Cross Societies and to W.H.O., and with characteristic speed and resourcefulness, the Canadian Red Cross Society and its National Commissioner, Dr. W. S. Stanbury, responded by recruiting and dispatching a Canadian team of doctors and physiotherapists. To head this team of experts in physical medicine a happier choice could scarcely have been made than that of Dr. Gustave Gingras, who left his important work in Montreal to contribute his services to a stricken nation.

Dr. Gingras has now returned to Montreal and has given us a preliminary report on his work. He was appointed Senior League Delegate and Medical Liaison Officer to the Moroccan government. Arriving in Rabat on Christmas Eve, he set to work

immediately to organize, to assess, and to direct treatment services under conditions which we can imagine would have dismayed a lesser man. He was joined in the field by small representative groups of doctors and physiotherapists from 17 countries of the Western world including a further Canadian contingent consisting of F/L D. H. Brooks of the R.C.A.F. Medical Branch and five bilingual physiotherapists from Montreal.

Dr. Gingras estimates that about 6% of the people affected are very severely paralyzed, and that they will remain incapacitated for the rest of their lives. At the other end of the scale, 15-20% were assessed as minimally involved and able to resume their customary activities with slight disability. The remainder have moderate to severe muscle damage, mainly in the extremities, and it is this large and scattered group which will repay the best efforts to restore them to health. The mass application of hydrotherapy and dry therapy in a program of muscle re-education has been undertaken in the face of the most primitive conditions and appalling shortages of personnel and facilities, particularly transportation.

To a reader of P. C. Wren, the names of Rabat, Casablanca, Fez and Meknes have a romantic association as well as a suggestion of tropical languor. The actual conditions in mid-winter in Morocco are apparently quite different, and snow, rain, mud and cold recur with depressing frequency in descriptions of the current episode.

The skilled international contingent of persons qualified in physical therapy remains a pitifully small force for what needs to be done. The training of Moroccan nurses and nurses' aids in the rudiments of physiotherapy has already commenced but each such person has to be diverted from an equally useful task in the health service of the nation. A special hospital of 2000 beds, mainly for children, is being created from old French army barracks in the ancient capital, Fez, and here the training of native helpers will proceed.

Prosthetic appliances such as braces and splints are not widely accepted by the patients, and the practical difficulty of attaching a leg brace to the babush or slipper can only dimly be appreciated by those who have not had to attempt it.

Much remains to be done to alleviate the consequences of this situation but a fine start has been made through the international action in which Canada has taken a leading part. Dr. Max Desmarais of Winnipeg has already taken over from Dr. Gingras and will serve for the next four months. Canadian medicine may well be proud of the contribution being made by the men and women who responded so promptly and so ably to the call of the Canadian Red Cross Society for aid to Morocco in her calamity. It is an example of international co-operation in somewhat unusual circumstances and is probably the first occasion on which rehabilitation of this type on this scale has been undertaken.

Editorial Comments



DONALD C. GRAHAM, M.D., F.R.C.P.[C.]

INTRODUCING THE EDITOR

Members of The Association will be interested to know that the Executive Committee has appointed Dr. Donald C. Graham to the post of Editor of the *Canadian Medical Association Journal* for full-time service effective July 1, 1960. With the necessity of filling the vacancy occasioned by Dr. Gilder's decision to return to the United Kingdom, the Staffing Committee was confronted with a difficult task. Widespread enquiries were initiated both in Canada and abroad and the post was drawn to the attention of all members through several advertisements in the Journal. The consequence of these actions was that the Staffing Committee had 23 qualified applicants, only one of whom could be selected. Unsuspected reserves of interest and talent were disclosed and it is significant that the importance of the appointment was recognized by all who considered it.

Dr. Donald Graham graduated with the Class of 1938 at the University of Toronto and his post-graduate training was interrupted by World War II. He served from 1940 to 1945 in the R.C.A.M.C. and the R.C.A.F. in Canada and the United Kingdom. Returning to civilian life, he resumed his training at Sunnybrook Hospital and qualified, by examination, for the Fellowship of the Royal College of Physicians and Surgeons of Canada in 1947. His special interest has related to arthritis and rheumatism and in private practice he soon achieved prominence in this field. He is attending

physician at St. Michael's Hospital, Associate in Medicine, University of Toronto, and consultant to the arthritis service, Sunnybrook Hospital. Since 1952 he has been Medical Director of the Ontario Division, The Canadian Arthritis and Rheumatism Society.

His administrative talents and his professional stature have given him wide contacts in Canada, the United States and Great Britain, not only in his own special field but in rehabilitation and orthopaedic surgery. He is a member of the Editorial Board of "Arthritis and Rheumatism", the official Journal of the American Rheumatism Association, and a member of the Rheumatism Review Committee of that organization.

Dr. Graham brings to his new appointment an impressive scientific and academic background, considerable administrative experience and a sincere interest in communications as an important element of professional life. The Association is fortunate to find within its ranks such promising editorial timber and we will observe its fashioning under the demands of weekly publication.

DIETARY ASPECTS OF THE MELBOURNE CHILD GROWTH STUDY

An interesting aspect of the child growth study undertaken by the University of Melbourne¹ is an assessment of the nutrient intake and dietary form or pattern of 60 normal girls and 60 boys of Australian parents. The dietary study was commenced when the children were two years of age, and the originators of the study hope to continue their observations until the children reach adult life.

Dietary intakes were calculated, based on a record kept by the mother for one week before the annual interview. These values were compared with a dietary intake scale developed for the Australian Medical Research Council.

In reporting this aspect of the study, Cahn and Neal¹ concluded that 40% of diets showed low levels of calcium intake and that 30% were low in thiamine and nicotinamide. These observations are interesting, but what relationship have they to the clinical condition of the children concerned?

Too often in dietary studies on small groups it is forgotten that they should always be accompanied by detailed clinical and biochemical observations. There is every reason to believe that certain people need considerably less in nutrients than a standard would lay down, and so-called "dietary standards" tend to become sacred cows of limited practical utility.

The authors in the present study compared diets with incidence of dental caries, and found more dental caries in children consuming a "carbohydrate excess" of specifically refined carbohydrate. This might simply mean that children who eat sweets have bad teeth, rather than that "excess carbohydrate" as such adversely affects their health. Many of these questions will no doubt be considered as this study proceeds, and as more detailed data, both dietetic and clinical, become available.

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Medical News in brief

PARKINSON'S LAW IN MEDICINE

Economists were quick to see the humour and the truth in Parkinson's Law, that delightful formula which holds that there is no relation between the work to be done and the size of the staff assigned for its completion; that, on the contrary, work expands so as to fill the time available for its completion; and that subordinates multiply at a fixed rate, regardless of the amount of work produced. De Takats has decided to point out the applications of this to the field of medicine (*New England J. Med.*, 262: 126, 1960).

The "grant eater" is his first object of attack. By virtue of the process of grantee selection, a grant eater tends to receive the more grants, the more he has already received, and necessarily the individual value of each paper produced becomes in inverse relation to the size of the total output.

The weakness of staff and equipment of a hospital are thought to be eliminated by merger with a similar hospital, but it is doubtful that the work to be done, namely, adequate care of the patient, has been improved by the double increase in employee ranks.

Another striking medical application of the Law is to the situation where an original prematurely published paper curiously spirals—after the paper is read and re-read (under slightly different titles, of course) at different organizations—into ten to twenty papers. Here, the original thought multiplies at a fixed rate regardless of the amount of new thought given to it. The profession, in fact, is so used to this that it will hardly take notice of any new idea until it is seen again and again.

In a more serious tone, De Takats points out that there are other outlets for grants than object-centred research (that is, research which aims at finding the cause of and thus conquering a disease, such as cancer, heart disease or multiple sclerosis) that deserve equal consideration. Method-centred research where newer methods such as radiography, aortography, and cardiac catheterization have opened up new avenues of approach, and free and unrestricted research where no "stated" project is followed out, are two which have produced much of the progress that one can say exists in medicine.

CIRRHOSIS OF THE LIVER

An unusual study is reported in the *New England Journal of Medicine* (262: 1, 1960). It is unusual in having been conducted on two series of patients in two different cities, Boston and London respectively, and was designed to make a comparison of the features of cirrhosis of the liver in alcoholic and non-alcoholic patients. It is no reflection on the morals of Boston that the 35 patients with cirrhosis of the liver as a result of undue indulgence of alcohol came from the Boston City Hospital, while the series of patients with cirrhosis of unknown etiology and no history of alcoholism came from the Hammersmith Hospital, London.

Noteworthy points made in the report are that among the alcoholic subjects males predominated and

working, domestic and financial conditions were poor, while a history and signs of malnutrition were common, though a history of hepatitis was uncommon. In contrast, the London patients were mostly women, there were no unusual environmental factors, severe nutritional disturbance was rare, and 11 out of the 35 had previously had hepatitis. In the latter group there was often a history of portal hypertension and episodes of hepatic pre-coma. In the Boston group, these abnormalities were also not uncommon but they showed in contrast to the London patients a common occurrence of deep jaundice, fever, high neutrophil counts and macrocytic anaemia. Only the alcoholics had parotid gland enlargement, gynecomastia or Dupuytren's contracture. Whereas the alcoholics had an obviously enlarged liver, splenomegaly rather than hepatomegaly was characteristic of the London patients. When the alcoholic patients improved, their serum albumin level tended to return to normal.

Pathological studies showed that large and irregular regeneration nodules were common in the London group whereas the nodules in the alcoholic group were small and regular. Also among the Boston patients, liver cells showed increased amounts of fat and often necrosis, in contrast to the London group. In the the Boston patients, relapse after renewed drinking of alcohol was common and might be fatal or respond dramatically to abstinence and a good diet. Liver disease in the London patients was less dramatic but appeared to be inexorably progressive.

EPIDEMIOLOGY OF CORONARY DISEASE

In six counties of North Dakota, a study has been going on of the epidemiology of coronary heart disease among a general population of 106,000 people. The study began in September 1956 and its objects were to determine whether such a project was feasible, to compare the incidence of coronary heart disease among farmers and among other occupational groups, and to determine the characteristics of persons developing coronary heart disease as compared with the general population.

A preliminary report has appeared in the *American Journal of Public Health* (49: 1630, 1959), and the first thing the report shows is that such an epidemiological study of a general population can be carried out in conjunction with interested practising physicians over a period of a year with reasonable success. In this particular case, information on all persons with new or recurring manifestations of coronary heart disease seen by physicians in their practice over this period was obtained by monthly visits to all the practitioners in the area. Any persons reported as suffering from this condition were interviewed, as were their survivors in cases where they had died, to determine further data. Initial findings in a group of 228 males suggest that there is a much lower incidence of coronary disease among farmers than among other males, that there is a higher incidence in cigarette smokers than non-smokers and that lack of physical activity is also probably related to the disease. Dietary histories revealed no striking findings.

(Continued on advertising page 35)

GENERAL PRACTICE

PSYCHIATRY AND GENERAL PRACTICE



THE COLLEGE of General Practice of Canada in collaboration with three hospitals of the Mental Health Division of the Department of Health of Ontario has arranged courses in psychiatry in general practice for Wednesday and Thursday, April 20 and

21, 1960. This is a result of discussions with the Hon. M. B. Dymond, M.D., Minister of Health for Ontario, and with Dr. B. H. McNeel, Chief of the Mental Health Division.

Attendance at the courses at each centre will be limited to 15 in order that everyone may participate in the discussions. If there are more than this number of applicants, consideration will be given to holding a second course.

Attendance at these clinical sessions qualifies for 12 hours of Category I study credits by the College of General Practice. The hospitals collaborating in this interesting program of instruction are: the Ontario Hospital, Brockville; the Ontario Hospital, North Bay; the Ontario Hospital, London; and the Ontario Hospital, St. Thomas.

These particular programs have been planned by the medical staff of each hospital concerned and are as follows:

Ontario Hospital, Brockville—April 20 and 21 *Dr. F. Snedden, Superintendent*

APRIL 20

- 9.00 a.m. Registration
- 9.30 - 10.00—Welcoming address
Recent developments in psychiatry—
Dr. J. W. Snedden
- 10.20 - 11.00—The management of the anxious
patient—Dr. Henry Cardwell
- 11.10 - 11.50—The early diagnosis and management
of the depressed patient—Dr. D.
Bell-Smith
- 12.00 - 12.50—Early diagnosis and management of
organic mental illness—Dr. R. P.
Miller
- 2.20 - 3.00—Recognition and management of psy-
chiatric emergencies—Dr. D. Bell-
Smith
- 3.10 - 3.50—The treatment of the elderly patient—
Dr. G. R. Mansfield
- 4.10 - 5.00—Drug therapy in emotional illnesses
—Dr. G. R. Mansfield

APRIL 21

- 9.30 - 10.10—Documentation—Why it is necessary
—Dr. J. J. O'Connell
- 10.40 - 11.20—The management and treatment of
psychosomatic disorders—Dr. C. E.
Leach
- 11.25 - 12.15—Common emotional disturbances in
children—Dr. Henry Cardwell

- 12.20 - 1.00—The early manifestations of major
psychoses—Dr. M. L. Palmer
- 2.00 - 2.40—After-care of a discharged patient—
Mr. L. Bennett
- 2.50 - 4.00—Ward rounds
- 4.00 - 5.00—Round table discussion (Staff)

Ontario Hospital, North Bay—April 20 and 21 *Dr. W. H. Weber, Superintendent*

If assistance in getting hotel accommodation is wanted, please write to the Superintendent.

APRIL 20

- 9.00 - 10.00—The purpose of mental hospitals—
Orientation and documentation
- 10.00 - 11.00—Round table discussion on hospital
admissions
- 11.00 - 12.00—Contemplated suicide
- 2.00 - 3.00—Problems of neurosis
- 3.00 - 4.00—Emotional problems of the elderly
patient
- 4.00 - 5.00—Alcoholism—The physician and the
community

APRIL 21

- 9.00 - 10.00—The hospital as a treatment centre
- 10.00 - 11.00—Round table discussion on treatment
- 11.00 - 12.00—Rehabilitation, the family, the patient
and the physician
- 2.00 - 3.00—General practitioner and psychoso-
matic medicine
- 3.00 - 4.00—The physician and the acute psychotic
episode

Ontario Hospital, London—April 20 *Dr. D. M. Wickware, Superintendent*

- 8.45 - 9.30—Registration
- 9.30 - 10.30—Psychosomatic problems and their
treatment—Dr. E. S. Goddard
- 11.30 - 12.30—Management and treatment of alco-
holism
- 2.00 - 3.00—Epilepsy and its treatment—Dr. J.
J. Weber
- 3.30 - 5.00—Common behaviour disorders in
children—Dr. W. N. Downe

Ontario Hospital, St. Thomas—April 21 *Dr. C. A. Cleland, Superintendent*

- 8.45 - 9.30—Registration
- 9.30 - 10.30—Depressions and suicide—Dr. C. A.
Cleland
- 11.00 - 12.30—Problems of mental deficiency—Dr.
D. E. Zarfes
- 2.00 - 3.00—Emotional problems in later life—Dr.
G. E. Hobbs
- 3.30 - 5.00—The use of drugs in the treatment of
emotional disorders.

All addresses will be limited to 15 minutes, the remainder of the period being devoted to discus-
sion.

MEDICAL MEETINGS

CANADIAN NEUROLOGICAL SOCIETY

The Eleventh Annual Meeting of the Canadian Neurological Society was held in London, England, on July 13, 14 and 15, 1959.

The scientific sessions were held at the Royal Society of Medicine, with the members of the Association of British Neurologists and with the Fifty-ninth Meeting of the Society of British Neurological Surgeons on July 14 and 15. The chair was occupied in rotation by the presidents of the three societies, Allan Walters (Toronto), Professor F. J. Nattrass (Newcastle), and G. S. Clark-Maxwell (Derby).

The scientific program was as follows:

Neuraxial Congenital Dermal Sinuses

W. S. Keith (Toronto) reported eight cases of lumbosacral dermal sinus. Three cases were infected, of which two recovered and one died. He noted that in spite of many publications on this subject during the past 30 years these insignificant lesions were usually overlooked until infection had gained access to the central nervous system. Experience at the Hospital for Sick Children, Toronto, showed that death from this cause still occurred and that there was still a high incidence of damage to the brain, spinal cord, and cauda equina and also severe complications in the urinary tract. All these complications were preventable and a greater awareness of the existence and significance of these lesions was desirable.

Colloid Cysts of the Cervical Canal

R. T. Johnston (Manchester) described in detail two cases of intrathecal cyst of the cervical canal causing cord compression. The cysts were attached to the anterior aspect of the cord by a narrow pedicle, contained colloid, and were pathologically indistinguishable from the colloid cysts of the third ventricle. Their relationship to congenital cysts of the central nervous system in general was discussed, and the question raised as to whether colloid cysts favour predominantly the third ventricle because they originate only in a vestige of a specialized structure such as the paraphysis, or because an error of development at a stage which produces a colloid cyst is more likely to occur in the third ventricle than elsewhere.

Radioactive Encephalography: Automatic Brain Scanning Using Radioactive Iodinated Albumin

William Feindel, Joseph Stratford, G. A. B. Cowan, and S. Fedorul (Saskatoon) reported on the method and results of using an automatic brain scanner in localizing various lesions in the brain.

They noted that a number of radioactive substances had been used recently as indicators of local changes in the blood-brain barrier. Local variations in the uptake of the substances in the brain could then be mapped out by radiation counting devices applied externally to the head. Rectilinear automatic scanning had been developed, particularly by Sweet and Brownell, and detailed studies of collimation had been made by Shy and others. The present report was a review of 70 neurosurgical cases of verified intracranial lesions in which automatic scanning was carried out with twin

scintillation counters mapping the head in a spherical pattern. This apparatus, which had been designed by Reid and Johns at the Saskatoon Cancer Clinic, had been in use over the past three years and the advantages and limitations of the method were described.

Aspects of the Behaviour of Human Gliomas in Tissue Culture

T. P. Morley (Toronto) reported on the results of tissue culture of human gliomas.

As a basis for future study of gliomas *in vitro*, 60 tumours had been grown in culture and their appearance and behaviour recorded. Certain features might be seen which were characteristic of the group, even though the various types of tumour did not give rise to predictable patterns in culture. Attempts—largely unsuccessful—at transplanting these tumours into rats and mice were reported briefly and information concerning the shedding of glioma cells into venous blood was presented.

The Evolution and Dissolution of Convulsive Phenomena following Head Injuries

A. Earl Walker (Baltimore) presented a report on the course of patients with post-traumatic convulsive disorders over an eight- to ten-year period. He noted that the incidence of post-traumatic epilepsy did not seem to have lowered, compared with First War figures, in spite of better methods of wound therapy, less infection, and improved treatment for the severely head-injured patient. He wondered, however, whether the populations of the surviving head-injured from the two world wars was the same. Was it not possible that better methods of treatment had saved the lives of severely injured patients, a group in which the frequency of epilepsy was almost 50%?

He stressed the difficulty of making a clear diagnosis in many cases and this was especially true of sudden attacks of "dizziness". These attacks were commonly ascribed to vasomotor instability and although commonly transient might persist for weeks or months. He suggested that inclining the patient on a tilt table whilst taking E.E.G. recordings or suddenly compressing the ocular globes might help in diagnosis. The appearance of slow waves associated with syncope on these manoeuvres favoured a vasomotor origin of the attacks.

Even when attacks could be identified as epileptic it was not easy to decide whether the patient should be called an epileptic or not. Such a designation involved important courses of action by the patient, by his medical attendant, his employers, and his lawyer. It was of the utmost importance to know, therefore, if a patient had had one or more attacks which were epileptic, what the chances were of further attacks. In an attempt to answer this question he had studied two series of patients. The first was a series of 244 men seen and studied in detail in 1945-46. All had sustained head injuries, most of them penetrating the brain, and had had one or more convulsive seizures. These had been followed up for a period of ten years. The second series was 732 head-injured men in World War II examined six to nine years after injury. Of these, 207 developed epileptic manifestations. The period of follow-up varied from two to 10 years. The total followed up of the two groups was 435; 16 had died in the interim period.

In the first series, of those living 46.1% had had no attacks for more than two years and 35.6% had had no attacks from the fifth to the tenth year after injury; 14.6% had experienced only one or two attacks per year in the last five years and the remainder were having frequent attacks. This freedom from attacks was not related to medication. Of the second series, 21.1% had had no attacks for five years, 12.1% for two years, 22% had rare attacks, and 43.9% were having several attacks a year.

The frequency of major attacks was less than that of attacks of all types. Many of the patients with minor seizures were so little affected by them that they might be considered as "normal". This spontaneous regression of attacks after head injury had been mentioned by most writers on the subject but had been little emphasized.

The time of cessation of attacks was of interest and in all categories the highest incidence of cessation was in the second and third years. For all types of attack, 20% stopped in this period and about 5% per year thereafter. The incidence of freedom from major seizures was almost double this figure in the second and third years.

Patients with attacks occurring early after a head injury were generally considered to have a better prognosis than those with late attacks. In the first series, patients who had early attacks fared no better than those starting late. This series, however, was probably a select one and patients who had had early seizures in evacuation units or base hospitals might not be referred to the epilepsy centre. In the second series, however, only 15% of patients who had had an attack within a week of wounding were having attacks six years later; this might be compared with 50% of patients having their initial seizure one to four weeks later and 65% of those having an initial attack more than four weeks later.

In the first five years, the cessation or absence of any type of attack for one year was a good omen, for such patients had about four chances out of five of having no more attacks in the next five to eight years. If the patient was free of attacks for two years, the chances of recurrence of multiple attacks was quite slight. Even if the patient had occasional attacks in the first five years after an injury, however, there was still one chance in four that there would be no recurrence of attacks in the subsequent five years.

Frequency of attacks was of prognostic value, those having few attacks in the first five years being more likely to become free of attacks. Although the number of attacks might remain the same, improvement could take place by a shift from major to minor seizures.

Many people had hoped that E.E.G. recordings would give reliable information as to the possibility of epilepsy. From the evidence available he could only conclude, however, that brain waves might denote cerebral damage but they did not reliably indicate or forecast the occurrence of convulsive complications. Hence an abnormal E.E.G. did not mean that a patient had or would have post-traumatic epilepsy. In fact, men having comparable severity of injury, with or without epilepsy, had E.E.G.s of practically identical degrees of abnormality. This was true of records made six months after injury and many years later. In head injuries, therefore, the E.E.G. findings correlated with the degree of severity of wounding, which was only

one of the determining factors in the genesis of a post-traumatic epilepsy.

Where there was reasonable suspicion of attacks having occurred and a fear that these might recur, Walker felt it would be better to award the man an insurance policy against recurrence rather than compensation. In closed injuries, the premium should be not more than 1% and in open wounds not more than 10% of the face value of the policy. If he did develop seizures, he would be compensated; if he did not he would not have been stigmatized and the compensating agent would not have paid a penalty.

Even if seizures did develop, it should be clearly understood that they might not chronically recur. In fact, if within the first year or two after a head injury, the patient had had only one or two attacks, Walker would question the advisability of labelling the condition post-traumatic epilepsy. There was excellent evidence that such patients had a good chance of living a normal life not punctuated by convulsions.

Psychogenic Regional Pain Alias "Hysterical" Pain

Allan Walters (Toronto) delivered the presidential address of the Canadian Neurological Society on this subject. He noted that hysterical pain had traditionally meant pain in a bodily part, often with functional tenderness and sensory deficit and with no source of afferent stimulation. When it persisted unrecognized, it might elude diagnosis and defy treatment. A clinical series of hysterical pain problems from a neuro-psychiatric consulting stream had been reviewed. The range of psychiatric backgrounds extended well beyond hysteria to include most of the neurotic, psychotic, and organic types of reaction. Hysterical pain, then, did not signify hysteria and theories of hysteria might provide only a partial explanation. It was suggested that the term psychogenic regional pain be brought forward into widest usage in place of the term hysterical pain.

This kind of pain was psychogenic in that it might vary independently of the afferent sensory stream, whereas it appeared consonant and appropriate to the way the patient was feeling or behaving. It was regional in that it was perceived remotely from mental activity and localized in a region of contiguous physical tissue. The boundaries of this region, be it area or volume, could not be explained by present knowledge of anatomy or physiology, whereas they seemed to have the attributes of form and symbol in the process of perception. This pain appeared to be a symbol of mental life remotely localized in the somatic perceptual field.

This emphasis on the process of perceptual symbolization as a source of pain raised a context of general problems which were discussed in detail. He noted that such an emphasis under the term psychogenic regional pain might be a more useful basis for the study and treatment of this type of pain in view of our new knowledge and fresh appreciation of the complex processes which were involved in our perception of pain.

Peripheral Nerve Conduction in Neurological Patients

R. W. Gilliatt (London) said that motor nerve conduction was known to be slow in regenerating nerve fibres (Hodes, Larrabee, and German³), in

peripheral neuritis (Lambert⁴), and in localized compressive lesions such as the carpal tunnel syndrome (Simpson⁵). Comparable disturbances of sensory nerve conduction had been demonstrated by direct recording from the median and ulnar nerve trunks (Gilliat and Sears²).

These techniques had now been used to study the long-term effects of operation on the carpal tunnel syndrome. Postoperative examinations of patients with slowing of median nerve conduction at the wrist had been carried out at regular intervals for periods up to two years. Another series of carpal tunnel syndromes treated by splinting of the wrist had been investigated in the same way and a further group treated by local injection of hydrocortisone was being studied in collaboration with Dr. J. B. Foster.

In patients with lesions of the deep branch of the ulnar nerve, Simpson's original observation of a local conduction delay in the hand had been confirmed (Ebeling, Gilliat, and Thomas¹). It was of interest that a lesion in the hand might cause slight slowing of conduction in the proximal portion of the ulnar trunk as high as the axilla: this phenomenon had also been observed in regenerating nerves after suture at the wrist. In mild ulnar lesions at the elbow, motor nerve conduction studies had sometimes been unhelpful, significant abnormalities being found only when recording directly from the ulnar nerve above the elbow during stimulation at the wrist. In such cases, attempts had been made to define the upper level of the lesion by stimulating the nerve trunk above the elbow and recording the arrival of afferent volleys at axillary level.

In the lower limbs it was possible to record afferent volleys from the peroneal nerve and this technique might prove of value in the investigation of patients with mild sensory loss and paræsthesiæ in the feet.

In patients with long-standing polyneuritis marked slowing of nerve conduction had been the rule but in Charcot-Marie-Tooth disease the results had been variable and some of his patients had shown normal conduction velocity in spite of gross peripheral wasting.

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4. LAMBERT, E. H.: In: *Clinical examinations in neurology*, W. B. Saunders Company, Philadelphia, 1956, p. 313.
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Broca's Contribution, Reviewed a Century Later

Macdonald Critchley (London) discussed Broca's contribution to aphasiology. He noted that until the beginning of the nineteenth century scant attention had been paid to this subject. Articulatory defects were not distinguished from dysphasia and both were confused with incoherency of speech and mutism associated with states of semicoma. Later, physicians began to realize that speech impairment could arise independently of lingual paralysis and that loss of memory for words and names could exist without any concomitant loss of general memory.

The ideas of Gall that mental processes were divisible into rigid compartments and that each aspect of brain function could be correlated with a circumscribed area of the brain were a further stimulus to precise thinking.

Within the interregnum of indecision which these phrenological notions evoked came the classical demonstration by Broca.

He then described the events surrounding this demonstration and the discussions which followed it. He stressed the fact that the part played by Dr. Ernest Auburtin in this important event was often overlooked.

He noted that Broca's contribution triggered off a belief that speech disorder was a focal symptom in brain disease, and by implication that the normal faculty of speech possessed a cerebral "representation" of a limited punctate character.

Although many neurologists were utterly unimpressed by such over-simplification, they did not make a direct attack upon the materialists' notions and it was only within the last decade or so that more general dissatisfaction had been expressed. Not even had a rigid ascription of speech function to purely left-brain activity and speech dysfunction to left-brain disease been wholly accepted and the role of the minor or non-dominant hemisphere was no longer inadmissible.

A final remark was necessary as to the problem of dysphasia versus dysarthria. Originally regarded as more or less identical, they became sharply distinguished by Jackson and his contemporaries. After several changes of view in the intervening years, contemporary ideas once again tended to swing away from too rigid a cleavage between disorders of language. It was now recognized that in aphasic utterance there might be a considerable upset in phonemic patterns, but furthermore, cases of inborn articulatory defect might lead to a stunting in the free growth of the faculty of language. Lastly, the notion of articulatory apraxia—once enthusiastically acclaimed, later discredited—had once again become mooted as a factor in acquired affections of speech.

A Symposium on the Results of Modern Treatment of Head Injuries

C. E. G. Gould (Vancouver) stated that once the severity of damage, in terms of depth and duration of altered consciousness, length of retrograde amnesia, degree and duration of confusional state, condition of the spinal fluid, and precise information as to local damage had been appraised, a prognosis could be formulated. He wished to elaborate, however, on certain factors that had no relationship to the above criteria but which might exert a profound effect on prognosis.

Amongst these factors could be mentioned the pre-morbid personality of the patient and the litigation factor. Frequently a potent influence was exerted on a patient by a marital partner, members of the family, or friends. These influences often "froze" a patient into a pattern of reaction to injury where function was below the level predicted on a solely organic basis.

A particular problem in Canada was the immigrant who had not been successfully assimilated into the country of adoption. In such cases one frequently saw a paranoid reaction directed towards the insuring body.

In older patients, where head injury had been incurred at work, and especially when the work was of a hazardous nature, the motivation to return to work was weak.

When assessment of the role these factors might be playing in a given case was added to the assessment of severity of injury in organic terms, the picture could

become complex to the point where prognosis was difficult and frequently inaccurate.

W. Ritchie Russell (Oxford) said that every new discovery in cerebral physiology became applied to the study of brain injuries, and the experiences of the past 50 years reflected many changing attitudes. One could recall the old emphasis on microscopic lesions in the brain-stem, the concept of acute compressive anæmia of the brain, the period of treatment by intensive dehydration or by routine craniotomy in relation to fractures. It was generally agreed now that the chief effect of head injury in acceleration concussion was a physical disturbance of neurones caused by shearing and distorting waves of force throughout the brain. Strich's recent demonstration of widespread tract destruction in cases of traumatic dementia was most significant in this regard.

The most important advance in treatment in recent years had been concerned with protecting the lungs from inhalation during coma. First-aid workers now transported these patients in the semi-prone position and when difficulties persisted tracheotomies were done in hospital.

Recent interest in the brain-stem in relation to consciousness had led to a belief that damage here was the chief cause of coma, but it should be pointed out that the hemispheres were much more vulnerable and if widely concussed were just as likely to inactivate the brain-stem centres as the other way round. The application of hypothermia to severe injuries was of great interest but should be watched very critically. A reduction of, say, the degree of decerebrate rigidity meant that the nerve cells involved were being inactivated by cold, but when exactly this was advantageous must be very difficult to judge.

In recent years his special interest had been concerned with the rehabilitation of patients with head injury. Wartime experience demonstrated the importance of a vigorous program of physical training, and it was regrettable that the standard of rehabilitation of civilian injuries was in many places so low. Good rehabilitation prevented the post-traumatic neurosis from developing, but it must be realistic; there was no such thing as complete recovery from severe head injury, and the patient must understand this.

G. F. Rowbotham (Newcastle) said that it was well known that the clinical picture of a head injury resulted from a complex of interacting factors that arose both within and outside the head. He was concerned with an attempt to break up this complex and to focus attention on those factors that arose directly from the injury to the brain itself. Such a study was important in the context of this discussion since, given adequate treatment, the final outcome of any head injury must depend on the nature, the site, and the extent of the intracranial injury.

He was concerned on this occasion with post-mortem findings but mentioned operative findings, clinical features, neurological adductions, and animal experiments as other important methods of investigation.

His material consisted of a series of 50 brain specimens from patients under his care who had died from head injury. The brains had been removed and the extent and size of surface hæmorrhages noted. They were then cut in coronal section and lesions photographed. Histological examination was made of the

brain-stem and post-mortem findings correlated with clinical signs. (An extensive series of brain sections was then demonstrated.)

He realized that these sections demonstrated extreme degrees of injury but stressed that they probably represented in kind similar injuries which did not come to necropsy. It could be concluded from this material that the cerebral hemispheres were more likely to be damaged than the brain-stem and that lasting physical morbidity was largely hemispherical in origin. He thought that brain-stem syndromes were due, in the majority of cases, to hemispherical damage or swelling and not to intrinsic brain-stem damage. Brain-stem syndromes due to brain-stem damage were invariably fatal. He stressed that damage to the corpus callosum was common and probably played a significant role in the clinical picture and morbidity. He noted also that acute subdural hæmorrhages were common and often of sufficient size to compress the brain, and could lead to severe and long-lasting head pains. The incidence of damage to large arteries with infarction was small but when it did occur it gave rise to long-lasting morbidity.

Discussing the mechanisms of unconsciousness in head injury, he agreed that there was, as yet, no proof that the cerebral hemispheres were essential for consciousness and that injury to the brain-stem could cause unconsciousness. He thought, however, that it was possible that paralysis of function in both hemispheres could cause loss of consciousness and if this were so, then in head injuries he considered that the seat of unconsciousness was hemispherical and not brain-stem.

E. Bruce Hendrick (Toronto) reviewed a series of 1997 cases of cranio-cerebral injury admitted to the Neurosurgical Service of the Hospital for Sick Children, Toronto, between January 1955 and December 1958. The major forms of injury were discussed briefly. Special attention was paid to the treatment of severe head injuries with hypothermia and to the diagnosis and handling of extradural hæmorrhage in children.

A. N. Guthkelch (Manchester) considered some of the special problems related to head injuries in children and arising from a group of 590 patients admitted to the Royal Manchester Children's Hospital. He stressed the fact that in the mild case diagnosis was difficult and in 43 cases there was no record of head trauma, the only presenting feature being that the child had vomited after an accident. In another group of cases the child fell over and then had a generalized convulsion. Undoubtedly, some of these cases were of simple epilepsy and the head injury was secondary to the fit.

The incidence of epilepsy was 5%, including cases with a single fit, and the incidence of persistent post-traumatic epilepsy was 1.2%. The incidence was higher, 7%, in cases of compound depressed fracture. From this series, however, it would seem that widespread brain damage was more important than a focal lesion, for in the group of cases with more than seven days' disturbance of consciousness, the incidence of epilepsy was 25%.

Post-concussional symptoms were not often a problem and their frequency varied with the severity of the injury. Contrary to usual belief, intracranial hæma-

tomas were not uncommon in children, and in this series 12 extradural, 13 subdural, and five intracerebral haematomas were treated. All but one patient with acute subdural haematoma made good recoveries.

He drew special attention to a group of injuries around the orbit; these might be more serious than was at first suspected. In four cases sharp objects had penetrated the cranial cavity through the orbit. This penetration was unsuspected at first, with the result that one case developed clot compression, one meningitis, and two cases developed brain abscesses. In two cases injury to the soft tissues around the orbit resulted in cerebral thrombophlebitis and epilepsy. In four cases a haematoma in the orbital area without demonstrable external injury or fracture led to intracranial infection.

There were 11 deaths in the series (1.9%), most being due to primary brain damage. In three, necropsy revealed widespread anoxic changes; tracheostomy might have saved them. Two deaths followed air encephalography.

Joe Pennybacker (Oxford) reported the results of a questionnaire circulated by the Society amongst its members in January 1959. The object of the enquiry was to determine what proportion of head injuries in the United Kingdom were "covered" by neurosurgeons and to assess the value of special methods of treatment such as tracheostomy, hypothermia, and dehydration. The present report was a preliminary analysis of the returns which appeared to indicate that, with few exceptions, neurosurgical cover was inadequate and facilities for convalescence and rehabilitation needed expansion. The role of the general surgeon in head injuries was discussed and it appeared that the most important practical step which could be taken now was to train young general surgeons in the few special techniques applicable to head injuries.

The replies as to special methods of treatment indicated general agreement that tracheostomy was valuable, but there was less certainty as to the value of hypothermia and dehydration. The prognosis in cases of prolonged coma was discussed, and although it appeared that modern methods of treatment were saving more lives in the acute stage to be followed by prolonged coma, the numbers had not yet reached serious proportions.

Intervertebral Disc Protrusions in Childhood and Adolescence

J. E. A. O'Connell (London) said that experience of intervertebral disc protrusions in childhood and adolescence had been confined to those occurring in the lumbar region. The records of 38 patients with such protrusions and aged 17 years or less were reviewed and the findings compared with those of an earlier analysis of 500 cases of lumbar disc protrusion unselected as regards age.

While the etiological factors in adolescence were similar to those in later life, it was pointed out that the maximum age incidence of protrusions in adolescence differs in the two sexes and corresponds to the period of most rapid development in each. The stresses occasioned by growth may thus be of etiological significance.

The symptomatology in the young patients resembled that in adults, but adolescents might complain less of pain although their symptoms tended to be more

persistent. No case in the series developed a severe subjective defect of function. The spinal signs and those of tension in the roots of the sciatic nerve were frequently more severe in the young patient, while the neurological ones were less frequent and less severe than in adults. Radiological abnormality was frequently absent.

Other lesions in the lower portion of the spinal canal or involving the lumbo-sacral portion of the spine were important in differential diagnosis. Of the former, intraspinal neoplasms were the most important, but meningocœles of the extradural nerve produced a clinical picture identical with that of disc protrusions. Of the vertebral lesions, spondylolisthesis and ankylosing spondylitis were the most important. Arthritis of the apophyseal joints occasioned a picture almost identical with that of a disc protrusion in one patient. Although it was at one time always suspected in adolescents exhibiting the clinical picture which has been described, no case of tuberculous spondylitis had been encountered.

At operation, the last intervertebral disc or the penultimate one was involved in every case. The protrusions were composed of soft elastic disc tissue with a high fluid content, and on the average were larger than in adults.

The results of surgical treatment were good, 91% being either cured or greatly improved. Recurrence of symptoms required another operation in 6% of cases.

The different clinical picture in adolescents might be due to the mobility of the spine in early life. Muscle spasm due to the stimulation of the hyperirritable extradural nerve by the large soft protrusion might induce severe deformity and limitation of spinal movement and straight leg raising. This protected the extradural nerve from injury and neurological signs were therefore mild or absent.

Therapy in Carotid Artery Disease

H. J. M. Barnett and W. H. Loughheed (Toronto) presented a study of a substantially large series of patients proven arteriographically to be afflicted with carotid thrombosis or stenosis. The therapeutic problems posed by this group were discussed.

The most impressive result of the study was the need that it pointed to for early diagnosis. The difficulty encountered in distinguishing carotid artery disease from middle cerebral artery disease on a clinical basis had led them to conclude that one could not with any certainty discuss "carotid artery syndromes" and their therapy unless referred to pathologically or radiologically proven cases. On the other hand, the inefficiency of arteriography in determining clinically significant collateral and contralateral blood flow to the brain was remarked upon and illustrated.

Their experience with anticoagulant and surgical management of these cases was outlined. The hazards of embarking on surgery without an arteriographic survey of the total problem were presented. The complicating factor of greatest importance was the coincident occurrence of intracerebral carotid as well as basilar vertebral disease.

A Controlled Clinical Trial of Anticoagulant Therapy in Cerebrovascular Disease

John Marshall (London) described a clinical trial of anticoagulant therapy in cerebrovascular disease. The aim of the trial was to see if long-term anti-

coagulant therapy reduced mortality, prevented further strokes, and improved the functional capacity of the patients. One hundred and forty-two patients were in the trial, 71 on anticoagulant therapy and 71 as controls. There was no significant difference in the incidence of further non-fatal cerebrovascular accidents, but the incidence of fatal cerebral hæmorrhage was significantly higher in the treated group, hence the trial was stopped.

The Surgical Treatment of Primary Intracerebral Hæmorrhage

Wylie McKissock (London) presented a survey of 240 patients who had suffered a primary intracerebral hæmorrhage, presumably due to rupture of an atherosclerotic vessel, and had been treated surgically. The variable modes of onset were described and the difficulties of purely clinical diagnosis emphasized. Angiography was used in 167 cases but proved diagnostic in only 70% so that recourse to burr holes, often followed by ventriculography, was often necessary to establish the diagnosis. The absence of bleeding into the ventricular system or subarachnoid space in 20% of cases was commented upon.

Patients were treated by burr hole and aspiration (104), aspiration and later craniotomy (73), and craniotomy alone (31). Of the 208 patients treated, 106 died within three weeks. Follow-up of the 102 survivors for periods of one to 10 years revealed 31 deaths. Ten were from progression of the disease in periods of one to three months and five from further cerebrovascular accidents. In the remainder the cause of death was either unknown or some other disease. Of the 63 survivors, 25 were well and leading a normal life, 14 had minimal disability, 18 were moderately disabled, and six were totally disabled.

Age did not influence the chance of survival but situation of hæmorrhage did. Capsular hæmorrhages rupturing into the ventricular system and basal ganglia carried an almost 100% death rate. Those patients in coma had a 100% mortality whilst in those who were alert the death rate was 23%.

Cerebellar lesions formed some 10% of these cases and although they posed difficult diagnostic problems they were amenable to surgical treatment.

He stressed the fact that a controlled trial of surgical and medical methods of treatment was necessary to establish the correct course of action in this pathological condition.

The social program included a reception at Canada House by the Hon. Mr. George Drew, High Commissioner for Canada, and Mrs. Drew, on July 14. The Nuffield Foundation entertained the C.N.S. at Nuffield Lodge on July 13. The Annual Dinner of the Society was held at Claridge's Hotel on July 15. The National Hospital, Queen Square, recognized the visit by asking the Canadian president, Dr. Allan Walters, to give a lecture on "Homœostasis in the neuroses and psychoses" on July 13.

The annual business meeting was held at Nuffield Lodge on July 13. Sir Geoffrey Jefferson was elected Honorary Member. The Executive of the Society for 1959-60 is: past president, Allan Walters, Toronto; president, Charles Gould, Vancouver; vice-president, Claude Bertrand, Montreal; secretary-treasurer, Preston Robb, Montreal.

The Twelfth Annual Meeting of the Society will be held in Vancouver on June 9, 10 and 11, 1960.

Association Notes

SECRETARIES' MID-WINTER CONFERENCE

The annual mid-winter secretaries' conference was held at C.M.A. House in Toronto on February 12 and 13, 1960. All divisions were represented and Dr. A. D. Kelly, General Secretary of the Association, was in the chair. Among the various topics which were brought up for discussion were the dates and locations of the divisional annual meetings for 1960 and the preparation for the annual meeting of the Association in Banff next June. The divisional secretary for Saskatchewan brought the latest information on the development in his division in the field of medical economics. Members were briefed on the forthcoming questionnaire on health insurance and on the progress of the relative value study which is being carried out by the department of economics. Important current problems were reviewed in a march-past by divisions. Time was also allotted on the agenda for discussing public relations and medical publications of the C.M.A.

The assembly had the advantage of listening to Mr. R. O. Moore of the firm of Woods, Gordon & Company, who delivered a most informative address on the function of management consultants. The number of questions directed to Mr. Moore gave ample evidence of the interest which he elicited among his listeners.

On Friday evening the secretaries and their wives were entertained at Dr. A. D. Kelly's home and on Saturday afternoon they met with representatives of the Medical Exhibitors' Association at the Park Plaza Hotel.

PHYSICIANS' ART SALON

The Physicians' Art Salon Committee cordially invites Canadian physicians and medical undergraduates to enter paintings, photographs or colour slides in the 1960 Salon to be held in the Banff Springs Hotel, from June 13 to 17. This will mark the 16th year that this interesting art and photographic feature will be held at the annual C.M.A. Convention. It is again sponsored by Frank W. Horner Limited, Montreal, Quebec.

Conditions of Entry

Entries will be accepted in three sections: (1) Fine Art, (2) Monochrome Photography, and (3) Colour Photography.

The Fine Art section is further subdivided into three categories—Traditional, Contemporary (Modern), and Portrait. Classification into these categories is done by the judges. There is no restriction on media; oil, tempera, gouache, water colour, charcoal, pencil, or dry brush is acceptable in each.

Each exhibitor may submit up to three entries in the Fine Art and Colour Photography and four in Monochrome Photography. Exhibitors may enter up to the limit in one or more sections. There is no charge. All costs, including transportation to and from Banff, will be borne by Horner.

Judging and Awards

All accepted entries will be displayed in the Salon and then judged for awards by a competent jury selected by the Art Salon Committee.

To Obtain Entry Form

Any physician or medical undergraduate may obtain an entry form and complete details from the sponsor at P.O. Box 959, Montreal, Quebec. A short note or post card will bring the form, along with complete instructions on how to prepare and ship your entries.

Art Salon Calendar

The Physicians' Art Salon Calendar, an attractive desk piece based on Salon exhibits, will again be prepared by Frank W. Horner Limited. The calendar reproduces selections from the award winners and is distributed to all physicians in Canada with the compliments of the company.

LETTERS TO THE EDITOR

RHEUMATOID ARTHRITIS AND
AGAMMAGLOBULINÆMIA*To the Editor:*

Dr. D. M. Robertson (Morrisburg, Ontario) published a very interesting report on a case of rheumatoid arthritis and agammaglobulinæmia in the January 9 number. In it he quotes Good *et al.* as calling into question theories of the etiology of rheumatoid arthritis based on hypersensitivity. Also, in his discussion Robertson suggests that his case tends to show that collagen disease can occur in the presence of agammaglobulinæmia, and that therefore the hypersensitivity idea as to cause of collagen disease is open to question. This questioning attitude seems to be based on an idea that sensitivity is due to protective antibodies in gamma globulin. Many allergists do not feel this is true. There is increasing evidence that sensitizing antibodies are not the same as immunizing antibodies. Alexander Wiener¹ suggests this. Sherman² points out that in the case of bacterial allergy the antigens which cause it are not the same as those against which immunizing antibodies are developed. Blatt³ quotes Rosenthal as saying that allergy and immunity are closely related and stating further "it seems fairly certain that allergy may be produced without immunity, but it is more difficult to demonstrate that immunity can be produced without allergy." He also quotes Porter who reported the study of a child with congenital agammaglobulinæmia who was capable of producing delayed hypersensitivity in the absence of circulating antibodies and maintained tuberculin reactivity after B.C.G. vaccination. At the Atlantic Regional Meeting of the Royal College of Physicians and Surgeons of Canada in Halifax last October, Dr. C. B. Stewart presented a paper, containing considerable evidence that, in the case of tuberculosis, immunity and sensitivity are not interdependent. There is no confusion therefore in suggesting that collagen diseases, including rheumatoid arthritis, are probably frequently due to hypersensitivity reaction

to some antigenic material from bacteria located elsewhere in the body. These bacteria may or may not be stimulating an immunity reaction where they are, or the development of immunizing antibodies in the form of gamma globulin.

I would suggest that Dr. Robertson's case was not so much one of agammaglobulinæmia as hypogammaglobulinæmia.

Dr. Robertson is probably on the right track when he is trying to increase the gamma globulin by stimulation with a stock respiratory vaccine. No one has ever proved that a so-called autogenous vaccine is superior, although many writers assume that such is the case. If he is using the standard doses often recommended by the makers of vaccines, he is probably not giving a sufficient amount to stimulate properly the production of antibodies.⁴ In a case of this kind it might be wise to build up the resistance of several compatible donors with large doses of stock vaccine and then use some of their gamma globulin.

562 Dunn Ave.,
Lancaster, N.B.,
February 2, 1960.

K. A. BAIRD, M.D.

REFERENCES

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2. SHERMAN, W. B.: In: *Ocular allergy* by F. H. Theodore and A. Schlossman, Williams & Wilkins Company, Baltimore, 1958, p. 9.
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WOUNDS OF THE HEART

To the Editor:

In the January 30, 1960, issue of the *Canadian Medical Association Journal*, you published a letter to the editor from Dr. J. D. Haynes. In this letter, he stated that our article on stab wounds of the heart (*Canad. M. A. J.*, 81: 1014, 1959) was in error in stating that only four such cases of stab wounds of the heart had been reported in recent years in British literature. He feels that this was an error because an article he published in the *Canad. M. A. J.* in 1956 was not recognized. At the bottom of the letter you published an apology.

I would like to point out that no apology was necessary, for, in the first place, neither of his cases recorded were of stab wounds. One was a bullet wound and the other was a heart injury sustained while a doctor was attempting to treat a cardiac arrest which had occurred during a tonsillectomy. In the second place, both of these cases were treated in Baltimore, Maryland, and in reporting our case as the first Canadian case reported, we compared it to the number of cases in the British Isles (British literature) and in the United States.

Perhaps he had misunderstood our terminology. By British literature is meant those cases published from Great Britain.

F. G. WESTGATE, M.D.
Medical-Dental Building,
925 West Georgia Street,
Vancouver 1, B.C.,
February 9, 1960.

SAFETY OF ELECTRO-CONVULSIVE THERAPY

To the Editor:

I wish to support Dr. Pascoe in his reply to Dr. Dobkin (*Canad. M. A. J.*, 82: 280, 1960) that E.C.T. is extremely safe and with little risk. I would like to quote D. K. Henderson,¹ who states, "Physically, there are, since the introduction of muscle relaxants, few contraindications to the treatment", "and the strain on the cardiovascular system incurred by prolonged agitation must be weighed against the strain imposed by a convulsive seizure".

After all, the mortality rate is only 0.06%,² and provided that cases are carefully selected on the basis of diagnosis (both psychiatric and physical) the value of this treatment for depression and schizophrenia outweighs its disadvantages.

F. HOUSTON, M.D.

82 King Street,
Saint John, N.B.,
February 4, 1960.

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1. HENDERSON, D. K., GILLESPIE, R. D. AND BATCHELOR, I. R. C.: Textbook of psychiatry, 8th ed., Oxford University Press, London, 1956.
2. DIETHELM, O.: Treatment in psychiatry, 3rd ed., Charles C Thomas, Springfield, Ill., 1955.

MEDICAL PAPER-BACKS

To the Editor:

Reviewing a book on cancer of the breast for this journal has stimulated me into addressing you on the subject of a heresy that I have been nursing for some time on the subject of medical books. (Don't let your book advertisers see this.)

Ruskin said "There are books for the hour and books for all time." When we look at our personal medical libraries and see the proportion of books five years old or more that are virtually worthless to us today and consider what they would bring in the settling of our estate, we know into which of Ruskin's categories our books fit. Most of them have gone completely obsolete without the grace of being "old".

All this is as it should be in a developing science. Yet, knowing the rapid rate of obsolescence, we continue to produce and to purchase only what are virtually souvenir editions—in price if not in quality—and so make it harder to throw them away when that should be done.

Has the time not come then when we should adopt the modern trend and buy paper-back editions of new books? How easy to dispose of them when newer editions have made them obsolete!

Look too at the expensive cuts that many carry, and critically appraise their value. The proportion that you'd gladly leave out is high. How much wider the distribution of good medical literature—so trimmed and bound—and how much easier to keep medical students supplied, keen and up-to-date! If among such books there were the rare one that should be preserved it would be a simple matter to have it bound, in our own style, and then would our personal library acquire some worth. The greatest benefit, however,

would be in the realm of medical education—at all levels.

Oh yes! we know about books and income tax. It would simply become a matter of transferring the saving to charity, and you are still the winner. Of course the promotion value of paper-backs on your office shelves instead of gold-lettered leather, as indicative of your being so up-to-date that the others were just no good to *you*, would be beyond computing.

Who will bell the publishers? Or is it the medical authors, who might well have notions of being engraved in immortal buckram?

NORMAN H. GOSSE, M.D.

324 Spring Garden Rd.,
Halifax, N.S.,
February 10, 1960.

ASSOCIATION OF OTOLARYNGOLOGISTS OF THE PROVINCE OF QUEBEC

To the Editor:

We should like to direct the attention of the otolaryngologists of the Province of Quebec to a newly formed association.

The otolaryngologists certified by the College of Physicians and Surgeons of the Province of Quebec and practising otolaryngology in the province of Quebec grouped themselves into an association in 1959, in order to promote the scientific, economic, social and moral interests of its members.

The association under the name of "L'Association des Otolaryngologistes de la Province de Québec—The Association of Otolaryngologists of the Province of Quebec" was authorized by the Provincial Secretary on August 12, 1959. It is incorporated under the Professional Syndicates' Act.

PAUL ITTKIN, M.D.,
Secretary-Treasurer,

600 Medical Arts Bldg.,
Montreal 25, Que.,
February 4, 1960.

CONGRESS OF AVIATION MEDICINE

To the Editor:

Writing in the capacity of Chairman of the Organization Committee of the 1960 European Congress of Aviation Medicine, I would welcome the hospitality of your columns to advise your readers that this Congress is being held in London from August 29 to September 2, 1960, and a very full and interesting program has been arranged. Anyone interested should write to:

The E.C.A.M. (1960) Congress Secretary,
c/o British European Airways,
Central Medical Clinic,
London Airport (N),
Hounslow, Middlesex, England,
from whom all details can be obtained.

A. BUCHANAN BARBOUR, M.D.,
Director of BEA Medical Services.
January 29, 1960.

OBITUARIES

DR. W. F. M. ADAMS, 85, died in Toronto on January 8. Born in that city, he graduated from the University of Toronto in 1902.

Dr. Adams is survived by his widow and two sons.

DR. ACHILLE FORGET, 72, died in Montreal, January 20. He graduated from the University of Montreal in 1913 and practised in Montreal for 45 years.

He is survived by his widow and one son.

DR. DAVID S. FORSTER, 66, died in the Montreal General Hospital on December 27, 1959. Born in Lucknow, Ont., he obtained his M.A. degree from McGill University in 1914 and taught French at Montreal High School before taking up medicine. In 1925 Dr. Forster graduated in medicine from McGill and interned at the Montreal General Hospital. He later joined the faculty of McGill Medical School and in 1942 became assistant professor of anatomy there. For a number of years Dr. Forster practised in Verdun and for the past two years he was medical officer for the Verdun Protestant School Board.

He is survived by his widow and a daughter.

DR. T. H. HEATH, 64, collapsed and died on January 20 while making his rounds in the Plummer Memorial Hospital, Sault Ste. Marie, Ont. He graduated from the University of Toronto in 1924 and practised in Desbarats until 1937, when he moved to Sault Ste. Marie.

Dr. Heath is survived by his widow and four daughters.

DR. JOHN T. HOGAN died in St. Francis General Hospital, Smiths Falls, Ont., on January 13 after a long illness. He was born in Perth, graduated in medicine in 1905 from Queen's University and practised in Smiths Falls for 50 years.

Surviving are his widow and a son, Dr. J. J. Hogan.

LE DOCTEUR J. M. ELPHEGE PREVOST est décédé à Montréal le 10 janvier à l'âge de 71 ans. Le défunt avait fait ses études secondaires au Collège de Joliette et il avait été reçu médecin à Laval en 1910. Il entreprit ensuite des études post-universitaires dans les principales cliniques et universités d'Europe et des Etats Unis. Au cours de la première guerre mondiale le docteur Prevost servit dans le corps médical de 1915 à 1918 en Angleterre et en France avec le grade de major. Dermatologiste et syphiligraphie, il appartenait à plusieurs sociétés savantes canadiennes et étrangères et avait écrit quelques volumes sur sa spécialité. La division du Québec de l'Association Médicale Canadienne perd en lui un de ses plus vieux membres puisqu'il en faisait partie depuis 1920. L'Association offre à sa famille ses condoléances les plus sincères.

DR. CHARLES B. STOVER, 78, died on December 11, 1959. He was born in Kent County, had his secondary education in Chatham, and graduated from

the Royal College of Dental Surgeons, Toronto, in 1907. He practised dentistry in Windsor until he commenced the study of medicine in Toronto University, graduating in 1919. This was followed by an internship of one year in Toronto General Hospital. He commenced the practice of medicine in Windsor in 1920. The years 1921 to 1923 were spent in Roosevelt Hospital in New York and the Northwestern Hospital in Chicago. He carried on the practice of his specialty of eye, ear, nose and throat diseases in Windsor until the time of his death.

During World War I he served with the 18th Battalion C.E.F. until 1915, training in Canada and England.

He was a member of Essex County Medical Society and the Ontario Medical Association, the Essex County Golf Club and Windsor Club.

Dr. Stover was married in 1914 to Miss Florence A. Bell, who predeceased him in January 1959. He is survived by a daughter, Mrs. James Smith-Ross, two grandsons and one granddaughter living in England, and one sister, Mrs. Hyslip, living in Montreal.

J.W.B.

DR. NORMAN McLEOD THORNTON, 69, died in Vancouver, B.C., on January 11. Dr. Thornton was a graduate of the University of Manitoba in 1924, and following internship at the Vancouver General Hospital, did postgraduate study in England. For two years, he was a ship's doctor and then did general practice in Vancouver. In 1928 he joined the anaesthetic staff of the Vancouver General Hospital. He held this position until his retirement in 1956.

Dr. Thornton was a member of the Canadian Anaesthetists' Society, and at the time of his death, was on the honorary attending staff of the Vancouver General Hospital.

He is survived by his widow and one son, Dr. Norman Thornton, Jr., who is at present on the post-graduate course in anaesthesia at McGill University.

R.M.

DR. NORMAN THORNTON

AN APPRECIATION

For many years "Norm" Thornton served the Vancouver General Hospital as anæsthetist, and through all those years he gave devoted personal attention to every patient that went through his hands. He had a kindly manner that gave reassurance to many a frightened child or adult, for adults fear anæsthetics generally as much as do children, though they can bring more reason to bear. Of course, nowadays, modern anæsthesiology has taken the fear almost entirely out of anæsthetics, but it was not so when Norm started, in the days of ethyl chloride and the open mask method—and a kindly word of explanation and reassurance did much to mitigate what was really a great ordeal. We remember that they were always forthcoming from gentle Norm Thornton.

At one time or another, he must have served in all the hospitals in Vancouver, and everyone who had any surgical work to do knew him well and liked him. For he was a friendly soul, quiet and unassuming, with no great conceit of himself, and not given to talking much—an excellent thing in an anæsthetist.

J. H. MACD.

PROVINCIAL NEWS

ALBERTA

A meeting of the Central Alberta Medical Society was held on February 10. Guest speakers were Dr. B. I. Buchanan, Director of the Red Cross Blood Transfusion Service, who spoke on the uses of whole blood, and Dr. James Stirrat of the Department of Pathology, University of Alberta, who spoke on biopsy specimens.

Another in the series of postgraduate courses for general practitioners which are conducted by the Canadian Medical Association, Alberta Division, and the University of Alberta Faculty of Medicine, was held on January 18 and 19. Subjects covered were obstetrics and gynaecology. Registration was limited to 50. The guest speaker was Dr. Brian D. Best, associate professor of obstetrics and gynaecology, University of Manitoba. The other speakers were from the Faculty of Medicine and the Edmonton area.

W. B. PARSONS

After a period of inactivity, the Calgary Anaesthetists' Society was recently formed. The executive for 1960 consists of Dr. J. H. A. Lawrence, chairman; Dr. W. Johns, coordinator; and Dr. W. M. Jones, secretary-treasurer. It is the policy of the Society to hold five to six meetings of scientific interest per year.

On January 26, 1960, Dr. E. A. Gain, clinical professor of anaesthesia at the University of Alberta (Edmonton), addressed the first meeting on the subject, "Anaesthesia for open-heart surgery".

ONTARIO

Dr. Louis Harnick, Toronto, has been elected a Fellow of the American College of Radiology. He was presented with his fellowship at the annual meeting of the college in New Orleans in February.

The Ontario Heart Foundation is supporting 46 research projects. In addition there are now five cardiovascular units in operation which receive patients from all parts of Ontario.

The Ontario quota of the Canadian Heart Fund drive which took place last month was \$500,000. Dr. W. Hurst Brown, chief of medicine, Toronto Western Hospital, is chairman of the medical research committee of the Foundation.

At the first ceremony of its kind in Toronto, 35 x-ray technicians representing 18 hospitals and clinics received certificates and pins at the graduation of the central section of the Ontario Society of Radiographers, in St. Michael's Hospital assembly hall in January. The two-year course is held in various hospitals and laboratories in Ontario. At present the educational entrance requirement is grade 12, but this may be raised to grade 13 in the near future.

Hospitals equipped to give this course in the central area include Toronto General Hospital, St. Michael's Hospital, Hospital for Sick Children, Toronto Western Hospital, Toronto East General Hospital, Princess Margaret Hospital, and St. Joseph's Hospital

of Toronto; Oakville-Trafalgar Hospital, Oakville; St. Joseph's Hospital and the McGregor Clinic, Hamilton; St. Joseph's Hospital, Brantford; Welland County General Hospital, Welland; Soldiers' Memorial Hospital, Orillia; Oshawa Clinic and Oshawa General Hospital, Oshawa; and South Peel Hospital, Cooksville.

Dr. J. M. Schulde has been appointed plant physician at General Motors, Windsor. Dr. R. B. Robson retired from this position last September after a service of more than 25 years. He retains a part-time association with General Motors until next September. He is vice-president of the International Association of Industrial Physicians and will attend its annual meeting in the United States next spring.

A tape recording machine has been presented to the General Practice Section of the Essex County Medical Society by John Wyeth & Bro. (Canada) Ltd.

The I.O.D.E. Hospital, Windsor, now has in operation a complete hypothermia unit. This unit was donated by a patient's family in order to save the father's life. Dr. David Brown and Dr. Victor Kleider, after many telephone calls and telegrams, located a unit in New York, whence it was re-routed from its intended destination in the United States to Windsor. Before this donation the need for the hypothermia blanket had been filled by the generosity of the Receiving Hospital, Detroit. Already it has been instrumental in saving at least five patients suffering from intracranial vascular catastrophes or from severe intracranial damage after motor accidents.

The Windsor Board of Health has discontinued the operation of the Fred Adams Hospital for isolation and care of communicable disease. These cases will now be cared for in Grace, Hôtel-Dieu, I.O.D.E. Memorial and Metropolitan General hospitals. Over the past two years the average daily census in Fred Adams Hospital has been only four, although as many as ten have been there at one time.

The City Council has turned the isolation hospital over to the Board of Governors of Metropolitan General Hospital.

When Dr. Wilder Penfield, Montreal, addressed the Canadian Club of Toronto recently, he expressed many positive ideas about the contributions to society which can be made by older people. He said that executives, statesmen and educators might discover that the growing army of older citizens need be no added load to society but courses of preparation will be necessary to make them productive. It is not true that men have no contribution to make in the last 20 years of life.

At 60 the body has passed its greatest strength, and physical demands should be lessened and changed, but the brain is quite often ready for its best performance in certain fields. New jobs call for the use of previously unused nerve cell connections in the brain. This is perfectly possible in the sixties.

Many men who retire suffer from a psychological malady called pseudo-senility, a delusion of incompetence. What a retired man needs is not a rest but a new and different job.

Women rarely suffer from this false senility because they can turn to housekeeping and all its specialties, ramifications and hobbies as a second career.

The patient may not be ready to decide for himself what his second career should be. Corporations, colleges and governments may have to put the man who is approaching statutory age limits through a set of psychological tests. Those who pass should take training for new and honourable jobs.

LILLIAN A. CHASE

QUEBEC

La mairie semble présenter des attrait particuliers à certains membres de notre profession. Nous apprenons que pour la dixième fois le docteur Oscar Gendron a brigué avec succès l'honneur d'être maire de Rigaud, alors que son confrère le docteur Roch Boivin était lui aussi réélu maire de Chicoutimi-Nord, par acclamation. Nous félicitons ces médecins pour l'intérêt qu'à l'instar de plusieurs collègues ils prennent aux affaires de la collectivité.

ABSTRACTS from current literature

MEDICINE

Cardiac Aneurysm with Ventricular Tachycardia and Subsequent Excision of Aneurysm.

O. A. COUCH, JR.: *Circulation*, 20: 251, 1959.

Only a few cases of ventricular tachycardia in association with ventricular aneurysm have been reported. In the present case the ventricular tachycardia was controlled only with rather exactly regulated doses of quinidine sulfate, and this drug was continued until the time of operation (ventriculoplasty). Quinidine was then discontinued without further recurrence of the ventricular tachycardia. This suggests that an irritable focus causing the tachycardia had been removed with the removal of the ventricular aneurysm. Despite an episode of cardiac arrest at the time of operation, the patient's postoperative recovery was excellent.

S. J. SHANE

Pitfalls in the E.C.G. Diagnosis of Left Ventricular Hypertrophy.

A. H. GRIEP: *Circulation*, 20: 30, 1959.

In this study, the antemortem electrocardiograms of 200 consecutive patients with autopsy-proved left ventricular hypertrophy were examined and correlations were made with the anatomical findings. Special attention was given to the presence or absence of abnormal QRS voltage criteria to determine their validity and specificity in left ventricular hypertrophy.

The absence of abnormal QRS voltage criteria in the electrocardiogram is concluded to be highly unreliable in dismissing left ventricular hypertrophy as a diagnostic possibility.

The characteristic ST-segment and T-wave changes associated with left ventricular hypertrophy probably remain the most reliable electrocardiographic sign available; however, ST-T changes of the left ventricular hypertrophy type were present in only 55% of patients in this series. If patients with obvious myocardial infarction or bundle-branch block are excluded, ST-T changes were seen in 80% of the remainder.

In the absence of midanterior myocardial infarction the finding of a taller R wave in V_5 than in V_6 may be a helpful hint as to the presence of left ventricular hypertrophy.

Abnormally high voltage of the QRS complexes was found in 22% of the whole group or 32% when frank myocardial infarction and bundle-branch block were excluded. However, abnormally high voltage as the sole manifestation of left ventricular hypertrophy was exceedingly rare in this series.

S. J. SHANE

The "Open-Negative" Problem.

T. B. BARNET *et al.*: *Am. Rev. Respiratory Dis.*, 80: 118, 1959.

The problem of persistent open cavity with bacteriological remission of greater or less duration is a phenomenon peculiar to the era of effective chemotherapy for tuberculosis. The roentgenographic findings fairly represent the morphological findings in the majority of patients whose lesions are resected and may also reflect the findings of lesions which have not been resected. The definition of "open-negative" based on the presence of a cavity and the inability to recover tubercle bacilli from secretions is arbitrary, but a bacteriological remission of six months or longer is recommended for inclusion in this category. Relapse should be defined as either bacteriological escape or combined roentgenographic-bacteriological worsening, but not as clinical or roentgenographic worsening without bacteriological proof of its tuberculous etiology. The relationship between relapse, duration of bacteriological remission, and duration of effective drug therapy is in need of further study. Not until this has been done can the relative risk of relapse and the risk of resection in individual patients exemplifying the "open-negative" problem be adequately weighed and balanced.

S. J. SHANE

Iproniazid in Angina Pectoris.

M. SHOSHKES *et al.*: *Circulation*, 20: 17, 1959.

In an attempt to evaluate the effectiveness of iproniazid in the syndrome of angina pectoris in ischaemic heart disease, a double-blind experiment was performed with four unknowns, two of which were iproniazid and two placebo, given separately at monthly intervals. Iproniazid was judged to be effective in relieving pain in a total of 64% and 73% of the group on two separate periods, while the placebos were effective in only 30% on two separate periods. These differences, analyzed statistically, were significant. The effects of iproniazid were slowly cumulative as evidenced by an increasing rate with time of both therapeutic effectiveness and of untoward reactions. Iproniazid at the dosage level employed produced a mild hypotensive effect and an elevation of mood, and aided in maintaining body weight. There was no apparent change in the clinical course or in the progression of the primary heart disease.

The initial dose level of 50 mg. per day was reduced satisfactorily to 25 mg. per day in nine of 11 subjects. The authors consider that doses over 50 mg. per day should be used only initially and not in ambulatory patients. When a therapeutic response is achieved, the maintenance dose of iproniazid should be continually reduced in stepwise fashion at one-week or two-week intervals until the minimum effective dose is found for the individual patient.

S. J. SHANE

SURGERY

Adenocarcinoma of Large Bowel.

V. A. GILBERTSEN: *Surgery*, 46: 1027, 1959.

A series of 1340 cases with 100% follow-up is most unusual. The total five-year survival was 32%. However, when excision for cure was attempted, about two-thirds of those with cancer of the colon and one-half of those with cancer of the rectum survived five years (1940-1945).

Duke's A, B and C classification was of prognostic import in that 83% of those with A lesions survived five years. Lesions of the transverse colon had the best prognosis (90% with five-year survival). Wide excision is advised except in the older age groups where mortality and morbidity would be excessive.

Palliation was achieved by limited resection or colostomy alone. Cæcostomy, catheter enterostomy, and ileostomy were not of value in palliation.

Several cases were treated by enlarged excision. This term is used when the ordinary operation could not be expected to remove all of the cancer tissue. The percentages according to sites corresponded to the classical picture presented by Wangenstein. Up to one half of the lesions can be diagnosed by the sigmoidoscope.

The extent of the true rectum is defined as the distal 10 cm. of bowel. The rectosigmoid encompasses the 10 to 16 cm. level. The sigmoid is above the distal 17 cm. of bowel.

It is suggested that large operations for large cancers and small operations for small cancers may be fitting and proper.

T. A. McLENNAN

Differential Diagnosis of Leaking Retroperitoneal Aneurysm.

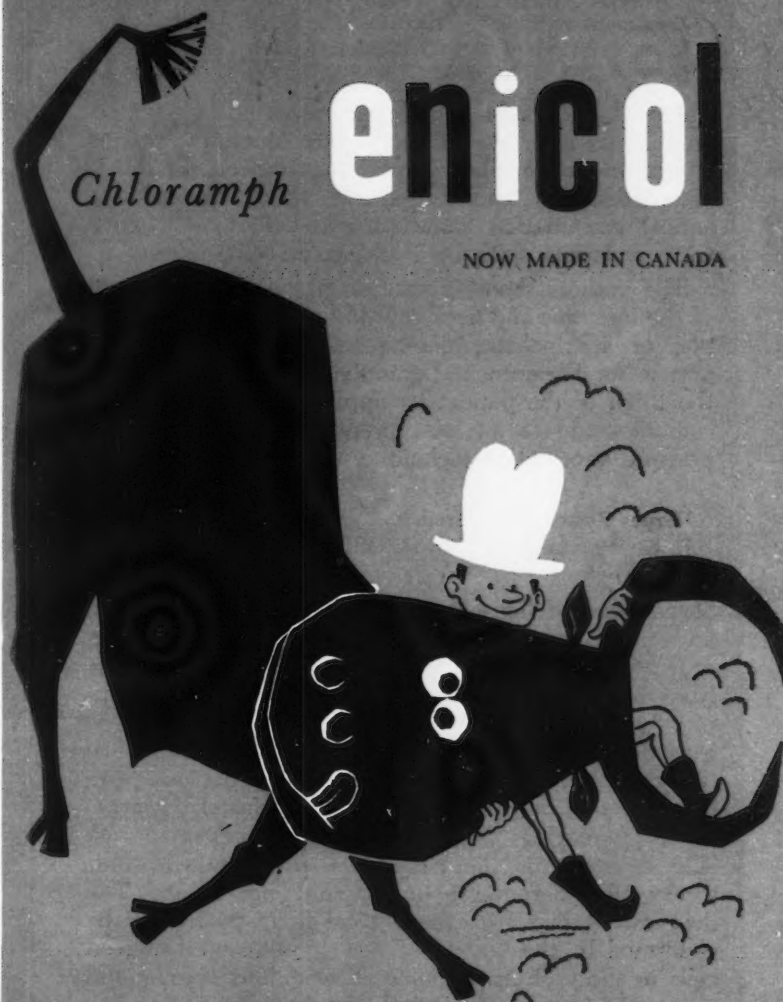
J. LOEWENTHAL, G. W. MILTON AND G. V. SHEAD: *M. J. Australia*, 2: 137, 1959.

This article is based on 14 cases of ruptured aortic aneurysm. One ruptured into the oesophagus, while the remainder ruptured into the retroperitoneal space. One case of splenic artery aneurysm rupture is also described.

The past history is not very informative. The usual story is of the onset of sudden and excruciating abdominal pain associated with pallor and hypotension in a man over 60 years of age. The pain usually remains constant for six to eight hours and is localized to the back. It gradually recedes, to recur again in 24 to 48 hours. Vomiting is rarely severe. On examination, an abdominal mass may be palpable in a soft but tender abdomen. In some cases the mass may pulsate. Bowel sounds may be present or absent. Discolouration of the flanks may be noted. The white blood cell count is usually increased as a non-specific response to the effused blood. Radiography may reveal calcification in the aorta on the lateral view, some loss of the psoas shadow on the antero-posterior film, and distension of the small and large bowel owing to ileus.

The differential diagnosis most often includes myocardial infarction, perforated peptic ulcer, pancreatitis and intestinal obstruction. The average length of life after admission to hospital was 16 hours.

T. A. McLENNAN



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DERMATOLOGY

Zirconium Granulomas of the Glabrous Skin Following Treatment of Rhus Dermatitis.R. M. WILLIAMS AND G. B. SHIPWORTH: *A.M.A. Arch. Dermat.*, 80: 273, 1959.

There have been numerous reports of axillary granulomas after use of deodorants containing sodium zirconium lactate. These granulomas appear as reddish-brown discrete papules, 1-4 mm. in diameter. Histological examination shows a granulomatous reaction with numerous epithelioid and giant cells.

The authors report a case of zirconium granulomas of the forearms and neck caused by the topical application of a tripeleennamine-zirconium oxide cream for poison ivy. Experimental granulomas were produced on the thigh of the patient by applying a solution of zirconium oxide to an area prepared by the multiple-pressure vaccination technique. ROBERT JACKSON

Herpes Zoster in Children.R. K. WINKELMANN AND H. O. PERRY: *J. A. M. A.*, 171: 876, 1959.

Seven cases of herpes zoster are reported in children under the age of six years. These cases were seen over a period of three years at the Mayo Clinic. The basic lesion was a herpetiform vesiculo-bullous eruption, most commonly on the torso and proximal extremities. Generalized herpes zoster occurred in two cases. In contradistinction to adult patients with herpes zoster, pain in children was unusual. Enlargement of regional lymph nodes was present in all. The duration of the zoster was from two to four weeks. Post-herpetic neuralgia did not occur. The diagnosis is based on the clinical findings. It may be confirmed by the finding of degenerating viral balloon cells in the vesicles or bullae. The authors recommend appropriate simple topical therapy.

ROBERT JACKSON

ORTHOPÆDICS

Arthrography in the Diagnosis of Meniscal Injuries of the Knee.V. C. TURNER AND F. B. WURTZ: *J. Bone & Joint Surg.*, 41-A: 1213, 1959.

While there is no need to perform arthrography routinely on patients who present typical history and findings of a torn meniscus, it is a valuable diagnostic aid in certain cases in which there is an atypical inconclusive picture. Through reports in the literature, various authors claim the accuracy of diagnosis by arthrography to vary between 53% and nearly 100%. In this series under analysis, diagnosis by arthrography was correct in 136 cases (73%). The error invariably was in reporting damage when in fact none was to be found at operation. Tears of the lateral meniscus cannot be nearly as accurately diagnosed by this means.

Although it is conceded that air arthrography probably offers some advantages in the roentgenographic diagnosis of lesions other than meniscal, 35% Diodrast is best to demonstrate these cartilage lesions. It is miscible with joint fluid, and, unlike air, can be used in the presence of joint effusion.

Strict aseptic technique is observed, including surgical preparation, draping, mask, sterile gown and gloves. To avoid damage to retropatellar or articular cartilage,

the needle is introduced through the lateral extension of the quadriceps tendon just proximal to the patella. From 10 to 15 c.c. of Diodrast is adequate, and this is injected after any fluid present is aspirated. An elastic bandage is applied snugly about the leg just above the patella to force the fluid into all recesses. Diffusion is encouraged by quick flexion and extension of the knee. As the contrast medium is quickly absorbed, the various views must be taken in rapid sequence. The authors use Lindblom's six stereo views in addition to the standard antero-posterior and lateral projections.

ALLAN M. DAVIDSON

PSYCHIATRY

Depression, Suicide and Suicidal Gesture in Medical Practice.M. H. MILLER, C. H. FELLNER AND N. S. GREENFIELD: *Ann. Int. Med.*, 51: 78, 1959.

The evaluation of the depressed patient is one of the most difficult problems in medical practice. Physicians in all specialties find themselves from time to time confronted with the necessity of evaluating the degree of depression present in a particular patient and of estimating the danger of suicide. Obviously, a diagnostic miscalculation in this type of situation could result in a catastrophe. The authors have prepared a review of the problems raised by the depressed patient with suicidal intentions. The depressive state experienced by the patient is described as a "discouraging" and frequently pervasive situation from which the patient cannot see any escape. Intensity and subjective reality of the despair of the depressed patient can be as great as similar emotions in patients who suffer from an incurable somatic illness.

Many depressed patients present themselves to the physician with symptoms attributable to a somatic illness. In cases in which the depression is associated with a somatic disease, the physician tends to underestimate the relative importance of the depression in the general symptomatology. This diagnostic problem is especially vexing in patients with advanced depression in whom it is natural to attribute the symptoms of depression to conditions such as hypertension, arthritis, functional disorders of the intestines, or "insomnia".

The etiological factors in the depressive state are considered from the hypodynamic and psychobiological points of view. The authors discuss the importance of the age of the patient at the time of onset of the depression as a diagnostic and etiological factor in the evaluation of depression and of suicidal intention. Depression and suicidal intention are observed at all ages, but most commonly in youth and old age. However, there exist important differential features in the significance of the depressive symptomatology occurring at various periods of life.

The authors emphasize the marked tendency of medical practitioners to underestimate the severity of the depression, especially those occurring in mature or aged adults.

A scheme of therapy for depressed patients with suicidal intention is discussed. The authors emphasize the importance of the physician's close interest, continuous attention and well-timed intervention.

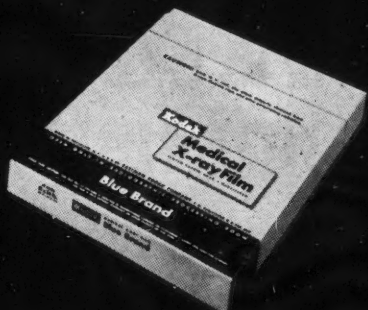
S. J. SHANE

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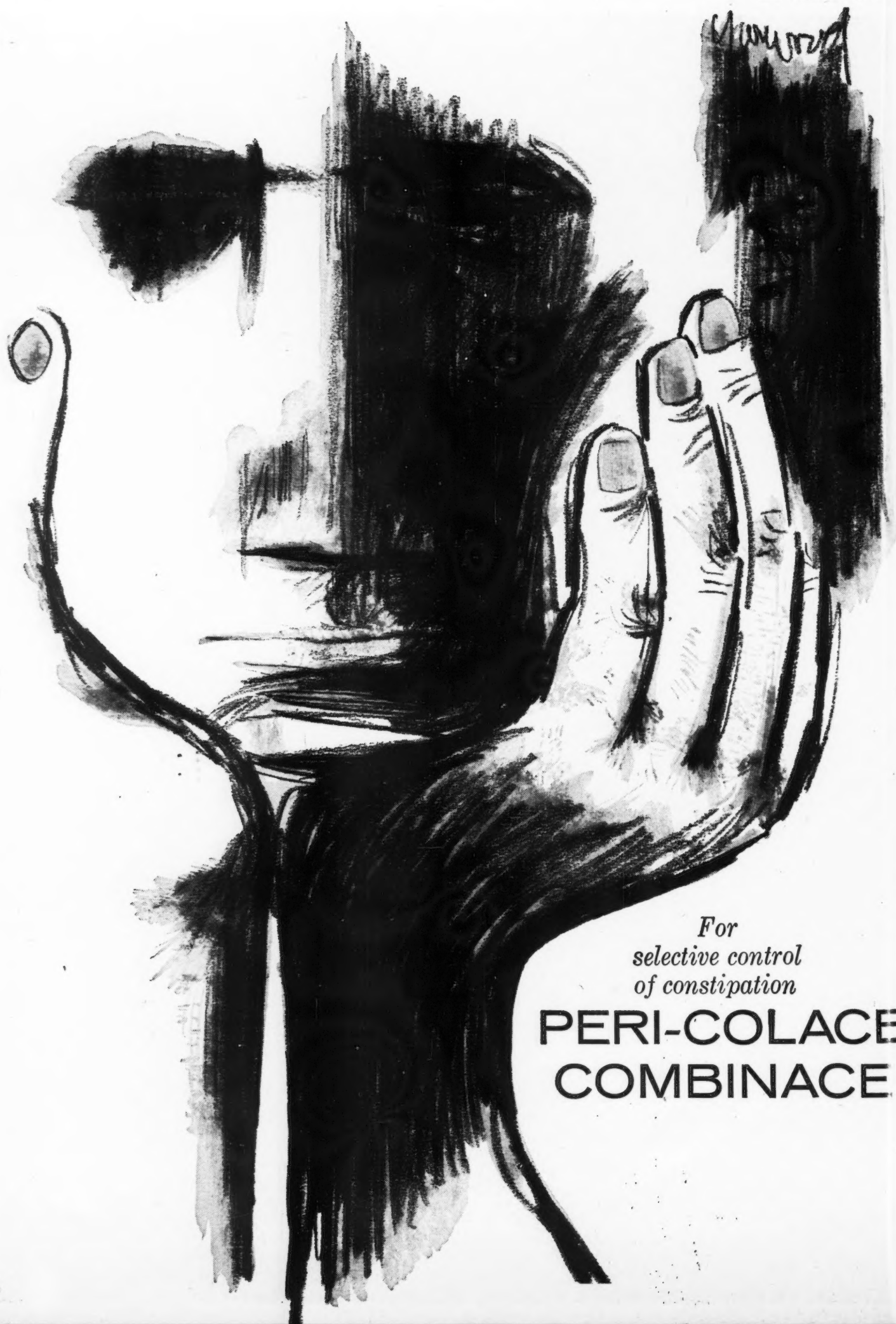
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BOOK REVIEWS

CANCER OF THE BREAST. Edited by Willard H. Parsons. 232 pp. Illust. Charles C Thomas, Springfield, Ill.; The Ryerson Press, Toronto, 1959. \$8.25.

This monograph from the Bannerstone division of the American Lectures in Surgery series deals with a lesion which is of fundamental importance, not only because of its frequency as the cause of death in women but also in view of the arguments engendered by the differences of opinion concerning the proper management in its different phases.

The author has chosen to present these problems in a sequence of chapters written by recognized authorities on each of the topics under consideration. Controversial matters are usually discussed from the differing points of view, and when a definite stand is taken on a particular point a rational explanation is presented.

It is unfortunate that in the foreword some of the material is presented "out of context", leading to false impressions. It is stated for example that "in women who have local surgical excision of the breast for cystic and proliferative conditions mammary carcinoma is as much as four or five times more apt to develop later than in women in the population at large", implying a danger in so treating the patient. Actually, the author goes on to point out the fact that "even when the most convincing of these clinical studies are reviewed, however, the future development of mammary carcinoma is not particularly impressive".

It is also stated that "he condemns incisional biopsy", whereas in fact he mentions the results of follow-up studies of patients having had aspiration, incisional and excisional biopsies and only states that "we believe that any biopsy offers certain hazards but that these are inconsequential compared to the value of the procedure". It might be noted that the present reviewer actually favours incisional biopsy as the method of choice.

The author of the chapter on simple mastectomy states, "I have no doubt simple mastectomy is the operation of the future," no doubt a deliberately stimulating statement, but the editor in a very concise summary concludes that "radical mastectomy is still considered by most to be the preferable mode of treatment."

The techniques of radical and superradical procedures are beautifully presented and a chapter on radiotherapy makes interesting reading and should encourage thoughtful discussion. The treatment of metastatic disease by additive or extirpative hormonal therapy concludes the series of presentations.

The entire volume makes an attractive, concise, clear-cut picture of a very confusing problem and should be rewarding reading for physicians in all categories of practice. The book cannot be too highly recommended.

PSYCHOLOGICAL APPRAISAL OF CHILDREN WITH CEREBRAL DEFECTS. Edith Meyer Taylor. 499 pp. Illust. Harvard University Press, Cambridge, Mass.; S. J. Reginald Saunders and Company Limited, Toronto, 1959. \$9.35.

This is an excellently written presentation of objective studies on children with cerebral defects made by the author while she was in charge of the psychological department of the Neurological Division, The Children's Medical Center, Boston.

The first section consists of a number of case histories of children with various organic disturbances of the central nervous system. These include pre-natal or natal disturbances such as spastic hemiplegia, athetosis, kernicterus and deafness, hydrocephalus and spastic paraplegia, and post-natal disturbances such as pneumococcal meningitis, measles encephalitis and cerebral trauma.

This book presents in detail the test responses at different age levels. It shows how the responses of the children vary not only because of the lapse in time between testing and the original damage to the central nervous system, but also because of the associated maturational aspects of development. Not only the intellectual aspects are discussed but also the social-emotional development and the effect on the children of the emotional climate that surrounds them at different stages of their development.

The second section presents in detail specific tests considered most suitable for the appraisal of children with cerebral damage. This section will be of tremendous value to any psychologist who is called upon to provide psychological appraisals of children with organic cerebral defects.

This book may be considered as a companion to "The Natural History of Cerebral Palsy" by Bronson Crothers and Richmond S. Paine in which an appraisal of the physical progress and intellectual and emotional adjustment was made on 600 cerebral-palsied patients. It is felt that both these books should be in the library of any physician interested in the neurological disorders of childhood.

AUTOMATIC VENTILATION OF THE LUNGS. William W. Mushin, L. Rendell-Baker and P. W. Thompson. 349 pp. Illust. Charles C Thomas, Springfield, Ill.; The Ryerson Press, Toronto, 1959. \$12.50.

The authors have set themselves the task of describing how mechanical respirators work, how they should work, what they should be able to do, and what the physiological effects—both good and bad—are following their use. In ten chapters they have succeeded in answering most of the questions that beset the novice who desires a mechanical respirator, whether it is required to sustain the life of a patient with bulbo-spinal poliomyelitis, or to help the anaesthetist maintain adequate pulmonary ventilation during a prolonged operative procedure. Much of the recent knowledge of respiratory physiology that is essential to the clinical application and evaluation of automatic respirators is described in a lucid manner, together with the basic physical principles on which automatic ventilators are designed. There is also a complete description of several manually controlled and manually operated ventilators and inflating valves. A concluding chapter clearly describes and explains the situations in which automatic ventilation provides optimum conditions for the care of the patient with depressed breathing. This is accompanied by a stiff warning of the hazards that must be guarded against when automatic ventilation of the lungs is employed: "The automatic ventilator is clearly no toy but an undoubted boon to the anaesthetist and his patient. If these benefits are to be realized and still further enlarged, the machine must never be allowed to master the anaesthetist." . . . "That this instrument is no more than a tool, albeit useful, if not invaluable, is our present contention. Well understood and wisely used,

it is another milestone in the march of anaesthetic progress." In addition to a very extensive list of figures which show in excellent line diagrams the mechanical operation of the respirators described, there are three tables which classify the automatic ventilators, and describe the main factors in the functional analyses. There is also a list of manufacturers, a concise glossary of terms and a comprehensive index containing both authors and subjects.

This volume certainly fills a long-felt need. It should be read by every anaesthetist, and by all physicians, surgeons and obstetricians who deal with patients with severe respiratory difficulties, regardless of their etiology.

LES METHODES EN GENETIQUE GENERALE ET EN GENETIQUE HUMAINE (Methods in General and Human Genetics). Roger Huron, Professeur à la Faculté des Sciences de Toulouse et Jacques Ruffié, Professeur agrégé à la Faculté de Médecine de Toulouse, France. 556 pp. Illust. Masson et Cie, Paris, France, 1959.

Comme l'indique le titre, le but de ce livre est de souligner les méthodes de recherche génétique. Il est le résultat des efforts combinés d'un professeur de mathématiques statistiques et d'un professeur de génétique qui fait autorité dans l'étude des groupes sanguins humains.

Il y a deux parties principales. La première ne suppose aucune connaissance préalable du sujet, discute la génétique générale, illustrée par de nombreux exemples pris chez les organismes inférieurs et quelques uns chez l'homme. La deuxième partie est consacrée à la génétique humaine, en particulier à la description des méthodes statistiques de traiter certains ensembles de données sur les caractéristiques héréditaires chez l'homme.

En dehors du problème de savoir si oui ou non ce livre répond, de façon satisfaisante, aux intentions de ses auteurs (ce qui ne nous semble pas le cas), la première question, dans le contexte actuel, sera de quelle utilité ce livre peut être pour les médecins.

Le médecin qui consulte un manuel de référence en génétique est la plupart du temps à la recherche d'une information précise et récente sur la génétique d'un trouble spécifique. On peut admettre que, au moins dans ses grandes lignes la théorie génétique lui soit connue, et que son intérêt pour les méthodes mathématiques de recherche génétique soit limité. Il est donc peu probable que ce livre se révèle intéressant ou valable pour la plupart des médecins.

Le chapitre de quarante pages intitulé "l'Hérédité chez l'homme" est acceptable, et formera pour le praticien la partie la plus utile du livre. La section, "Le conseil génétique", se borne à sept pages, et ne contient qu'un seul pedigree de surdi-mutité, et une description incomplète de la génétique du diabète sucré.

Bien que de nombreuses anomalies médicales comme, la rétinite pigmentaire, ou la dysostose cléido-cranienne soient mentionnées, ça et là dans le livre, elles ne sont pas indiquées dans l'index. Cela seul suffit à limiter la portée du livre. La bibliographie abonde en erreurs, par omissions ou inexactitudes. Enfin, le prix semble anormalement élevé pour un volume broché.

Il existe peu de livres de références en génétique qui répondent aux besoins des docteurs ou des étudiants en médecine. Il est donc extrêmement regrettable que ce livre ne puisse être recommandé.

KLINISCHE RADIOLOGIE DES MAGENS UND DES ZWOELFFINGERDARMS (Clinical Radiology of the Stomach and Duodenum). Pierre Porcher, Paris, France, Hans Ulrich Stoessel, Berne, Switzerland, and Paul Mainguet, Brussels, Belgium. 264 pp. Illust. Georg Thieme Verlag, Stuttgart, W. Germany; Intercontinental Medical Book Corporation, New York, 1959. \$17.15.

Two radiologists—Mainguet of Brussels and Stössel of Berne—collaborated with their former chief, Dr. Pierre Porcher, at the Hôpital Saint-Antoine in Paris in writing this book. This hospital has had a tradition of gastro-intestinal investigations for many years and a large number of x-ray examinations are carried out daily. Close co-operation between surgeons and radiologists has resulted in refinements of the technique of the upper gastro-intestinal serial examination. The newer methods introduced by Porcher resulted in the present high standards which are attracting students from all over the world.

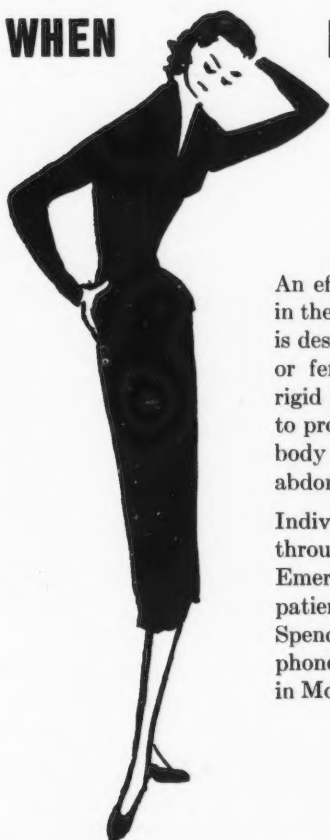
According to the senior author, his own moderately good acquaintance with foreign medical literature is in sharp contrast with the lack of interest and relative ignorance of radiologists abroad of French contributions to gastro-intestinal x-ray examination. This is the more reason to welcome the present volume. The routine examination of the stomach and duodenum is outlined and attention to detail, even in this well-standardized procedure, is noteworthy. Such improvements as preliminary injection of morphine in cases of hypotonic stomach or where retention of barium is present are amplified by illustrated examples which demonstrate the value of this procedure. How to pro-

ceed when searching for a particular disease of the stomach and in acute gastro-intestinal bleeding is described in detail, and the authors point out that they have never observed aggravation of bleeding after their procedures.

A summary of special procedures in problem cases involving certain suspicious areas is finally given in table form. Unusual positions, such as the knee-elbow, supine and Trendelenburg, are shown and their advantages in certain patients—pyknic as well as asthenic—are stressed.

The second half of the volume describes the advantages of parietography and of double contrast studies in outlining the wall of the stomach and in excluding or confirming abnormalities which may have been suggested by routine radiography. A beautiful section on radio cinematography follows. The cases in which these auxiliary methods clarify diagnostic problems are exceptionally well chosen and the reproduction of appropriate radiographs is excellent. After reading this book, one is convinced both of the value of these auxiliary methods and of the excellent work being done by the authors at the Hôpital Saint-Antoine. Anyone dissatisfied with present methods of routine gastro-intestinal examination and looking for refinement of technique or inspiration for independent research will find this volume useful. The extensive bibliography in various languages and from various parts of the world is evidence of the wide reading and experience of the authors.

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MEDICAL NEWS in brief

(Continued from page 640)

REFRESHER COURSE IN PÆDIATRICS AND PÆDIATRIC SURGERY

A refresher course on medical and surgical advances in the treatment of children will be held in the Auditorium of the Medical College, under the auspices of the Departments of Pædiatrics and Surgery, Medical Faculty, University of Manitoba, on March 24, 25 and 26. Formal lectures, panel and round table discussions and ward rounds at the Children's Hospital will make up the program. Professor R. A. Good, Department of Pædiatrics, University of Minnesota, and Dr. Tague Chisholm, Department of Surgery, University of Minnesota, will be the visiting speakers. Registration fee is \$15.00. Address registration applications to: Room 109, Medical College, Emily and Bannatyne Ave., Winnipeg 3, Man.

NEURO-PHYSIOLOGICAL RESEARCH

It is a pleasure to note that a recent issue of the Psychiatric Research Reports of the American Psychiatric Association, loosely entitled "Recent Advances in Neuro-Physiological Research", is contributed mainly from Canada. The editors of this series of scientific papers and discussions, given at a Regional Research Conference of the A.P.A. in November 1957 in Montreal, are Drs. D. Ewen Cameron of McGill University and Milton Greenblatt of Harvard University. It must have been difficult to find a title for this series of communications, which cover a great variety of themes. Thus the introductory paper by Epstein and Westley deals with patterns of communication within the family, with particular reference to a study of English Protestant middle-class families, while other contributions deal with such themes as types of memory dysfunction in old age, sleep threshold techniques, the use of the electrogastrograph and the chemical induction of neurolathyrism in the monkey. The volume can be obtained from Psychiatric Research Reports, American Psychiatric Association, 1700 18th Street, N.W., Washington 9, D.C., at \$2.00 per copy.

(Continued on page 36)

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MEDICAL NEWS in brief

(Continued from page 35)

**AMERICAN COLLEGE OF
OBSTETRICIANS AND
GYNECOLOGISTS**

The American College of Obstetricians and Gynecologists will hold its eighth annual meeting at the Netherland Hilton Hotel, Cincinnati, April 3-6. The scientific program will include the presentation of papers, seminars, clinical and breakfast conferences, and showing of motion pictures. Seminars will be correlated and consist of four sessions spreading over three days, all devoted to the same subject under the same leader, thus allowing complete development of material presented. On Tuesday morning, April 5, there will be a panel discussion on medical service plans, with representatives of industry, labour, insurance and medicine speaking on third-party plans and their impact on obstetrics and gynaecology. The presidential address will be given by Dr. John I. Brewer of Chicago,

and Dr. C. Paul Hodgkinson of Detroit will be installed as president of the College on Wednesday morning. Further information from Mr. Donald F. Richardson, Executive Secretary, The American College of Obstetrics and Gynecology, 79 West Monroe Street, Chicago 3, Illinois.

**A PLANNED STUDY OF
MINIMAL TUBERCULOSIS**

A study of 104 patients with minimal tuberculosis treated by rest, antimicrobial therapy, and surgical excision is reported by Douglass *et al.* (*J. Thor. Card. Surg.*, 38: 191, 1959) together with data from pathological studies of the resected tissue, and a follow-up report.

Bilateral surgery was performed in 15, resulting in a total of 119 thoracotomies. There were no operative deaths. Major complications occurred in 9%, and were treated successfully; minor complications in 13%, chiefly small

temporary air leaks, were followed by full recovery.

Observations on the resected specimens are reported. The outstanding finding was the presence of necrotic lesions in 103 patients, this being the dominant feature in 83. Bronchial communication was demonstrated in 49, and believed to exist in all necrotic lesions. Cavity formation was demonstrated in 48, open in 14, "filled" in 30, and largely scarred in 4. Pneumonic foci interpreted as recent bronchogenic spreads were noted in 10, despite antimicrobial therapy. There was no observed correlation between the duration of antimicrobial therapy and the morbid anatomical features, which varied widely; nor was there a demonstrable causal relationship between drug therapy and the observed features of the necrotic lesions, which had not been eradicated. The follow-up, although incomplete, gives information on 98 patients for two years or more, with an average of four years. The only known clinical relapse occurred in the fifth year.

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ANTIBIOTICS IN MEDICINE

The latest issue of the *British Medical Bulletin* (Vol. 16, No. 1, Jan. 1960) is devoted to a series of essays on antibiotics in medicine. These essays have been arranged under the general direction of Professor L. P. Garrod, who has chosen most wisely not to attempt to write a short textbook covering the whole of antibiotic therapy, but has selected a number of subjects of great practical interest, in which the material is very conveniently arranged. Four essays deal with specific clinical uses of antibiotics, including two on their preventive use in medicine and surgery respectively and two on the chemotherapy of tuberculosis and of bacterial endocarditis. Other valuable essays for the clinician are those on the principles of therapeutic use of antibiotics and on the dangers of antibiotic treatment, and the clinical problems of drug-resistant pathogens. There are two purely technical contributions on the determina-

tion of bacterial sensitivity and the use of antibiotics in selective culture media. Other subjects discussed include the general pharmacology and chemistry of antibiotics and the mechanisms of drug resistance. The editor has collected in one book a vast amount of material which could only be otherwise obtained with difficulty by scrutiny of a great number of original papers. Copies are available at \$3.25 through the Oxford University Press, Toronto.

FOOD AND INDIGESTION

A dietary survey was made of 70 patients with non-ulcer dyspepsia who attributed dyspeptic symptoms to certain specific foods. Thirty-six of these ate an "indigestible" food mixed with barium sulfate and were radiographed at intervals for three hours: the gall-bladders of these patients were outlined with iopanoic acid. Foods that are tasted during belching or regurgitation, such as onions, were

not used. Simultaneous studies of gastric acidity were also made in 21 patients. The studies were subsequently repeated, a non-indigestible food being used as a control.

Friedlander (*Brit. M. J.*, 2: 1454, 1959) attempted to correlate the patients' symptoms during the tests with the findings from these investigations. Only four patients developed symptoms with the indigestible food: gastro-oesophageal reflux was present in two, but no mechanism was apparent in the other two. One other patient had symptoms with both the indigestible and the control food, and three with the control food alone.

These results are surprising; the most likely explanation is that in patients with non-ulcer dyspepsia the actual nature of the food is not an important factor in the production of their dyspeptic symptoms. Almost any bout of indigestion, whatever the cause, is likely to have been preceded by the eating of a food commonly held to be indigestible, and this particu-

(Continued on page 41)

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References:

1. Barnes, R. H.; J.A.M.A. 166:898, 1958.
2. Ressler, C.; J.A.M.A. 165:135, 1957.
3. Birnberg, C. H., and Abitbol, M. M.: Obst. & Gynec. 11:463, 1958.
4. Robillard, R.: Canad. M.A.J. 76:938, 1957.

*Applied for.



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MEDICAL NEWS in brief

(Continued from page 37)

lar food is then wrongly held responsible by the patient for these symptoms.

FAMILIAL PATTERNS IN HYPERTENSION AND HEART DISEASE

Studies were made with regard to the prevalence of hypertension and of coronary heart disease in two successive generations of subjects. Thomas (*Circulation*, 20: 25, 1959) found that the greatest proportion of affected persons was always found among the offspring of two affected parents and the smallest proportion among the offspring of two unaffected parents. This finding is consistent with the hypothesis that hypertension and coronary heart disease are hereditary disorders, at least in part.

While the most striking correlations were seen when the prevalence of the same disorder was studied in two successive generations, similar but less striking correlations were found when hypertension was investigated in one generation and coronary disease in the other.

The female relatives of hypertensive women were found to have hypertension more than twice as frequently as their male relatives, while the male relatives of hypertensive men had hypertension almost twice as frequently as their female relatives.

1959 PHARMACEUTICAL CODEX

The following comment on the 1959 Pharmaceutical Codex is made in *The Lancet* (1: 326, 1960).

"The additions to the new *Codex* include 70 new general monographs, and 20 of these refer to drugs already included in the *B.P.* 1958. Among the monographs which deal with the more specialised materials (biological products, surgical ligatures, and sutures), poliomyelitis vaccine and rabies antiserum deserve mention. The *Formulary* (part VI of the *Codex*)—perhaps the most valuable section for the prescriber—contains some 79 new items, but 44 of them represent 'salvage' from those deleted from the *B.P.* There are

long lists of deletions under monographs and under formulary. Some 26 preparations suffer total eclipse, in that they no longer appear in either the *B.P.* 1958 or the *Codex* 1959. But few doctors will feel their withers wrung by the demise of infusion of quassia, solution of mercuric chloride, and the dilute solution of ammonium acetate. The rise and fall of cream of penicillin (also among the 26 condemned to the twilight of obscurity) may, however, cause some to reflect on the transient glories of therapeutic fame."

UNUSUAL COMPLICATION OF PREGNANCY

An unusual complication of pregnancy is reported by Graves (*Brit. M. J.*, 1: 403, 1960). This was a case of a Chinese patient aged 30 who was first seen on December 6, 1957, and was found to have a prolapsed uterus which she had had since the birth of her first and only child five years before. Nothing was done about the prolapse at that time, but in about ten days' time she returned to the hospital

(Continued on page 44)

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1. Lehrer, H. W., et al.: *Northwest Med.* 75:1249, 1955.
2. Smith, Richard T.: *New York Med.* 8:16, 1952

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Tablets were weighed and dispersed in 100 ml. of water in a stirred tank, with mechanical stirrer and pH electrode. Hydrochloric acid was added as needed to maintain pH at 3.5. The volume of acid required was recorded at frequent intervals for one hour.



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NOT CONSTIPATING, New Creamalin Antacid Tablets will not produce "acid rebound" or alkalosis. They have a pleasant taste.

1. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A. (Scient. Ed.)* 48:380, July, 1959. 2. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A. (Scient. Ed.)* 48:384, July, 1959.

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ONLY 1 TABLET EVERY 12 HOURS

*avoids need to waken patient because of
effective B.I.D. treatment... yet is inexpensive*

Studies have shown that one "FALAPEN" tablet every 12 hours has controlled scarlet fever, otitis media, pharyngitis and pneumococcal and gonococcal infections.^{1,2} Penicillin need no longer be given every 6 to 8 hours to be effective.

"FALAPEN" is relatively safe; when compared with parenteral administration of penicillin, oral administration is associated with much lower incidence of severe sensitivity reactions.

Each "Falapen" tablet contains potassium penicillin-G, 500,000 units

DOSAGE: Adults: One tablet every 12 hours. Increase or decrease dosage to meet the needs of the patient.

Bottles of 10 tablets.

REFERENCES:

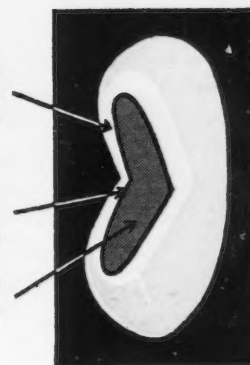
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FAST — Blood levels are rapidly established by immediate release of part of the penicillin in the stomach.

Newly-developed "Polymer 37"* coating resists stomach acid action but dissolves immediately in the intestine, exposing the penicillin core.

LASTING — Levels maintained by slow release in the intestine of penicillin from the core.

*Pat. 1959

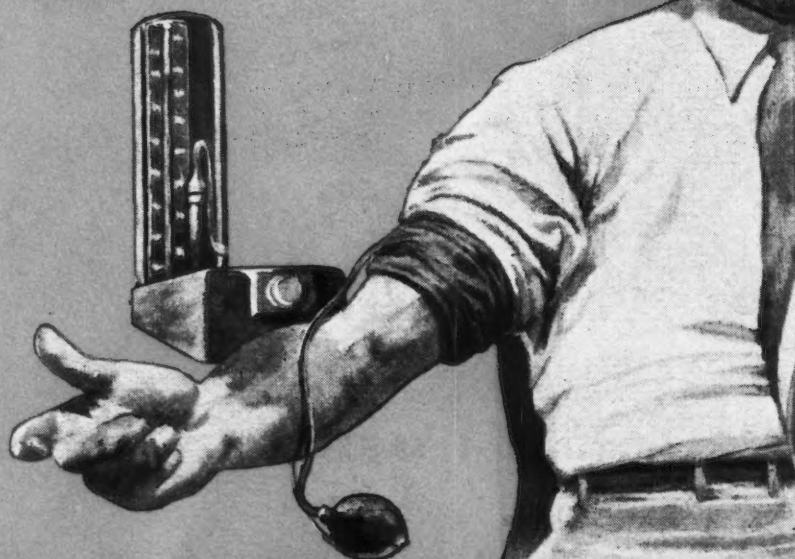


CAUTION: In rare instances, the injection of penicillin, and more rarely still its oral administration, may cause acute anaphylaxis. The reaction appears to occur more frequently in patients with bronchial asthma and other allergies, or in those who have previously demonstrated sensitivity to penicillin.



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unexcelled
combination of
effectiveness
and safety...



RAUTRACTYL

Squibb Benzhydroflumethiazide (Naturetin) and Rauwolfia Serpentina
Whole Root (Raudixin)) with Potassium Chloride

- effective in all degrees of essential hypertension — mild, moderate and severe.
- increased urine output with minimal alterations in electrolyte balance — urine composition remains more nearly physiological.
- supplementary potassium provides added protection against potassium loss during long-term therapy or when treating patients unusually prone to hypokalemia.
- unexcelled effectiveness and safety because it produces the highest degree of natriuresis and water diuresis with reduced kaliuresis.



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MEDICAL NEWS in brief

(Continued from page 41)

with symptoms of an acute abdomen. She said that the symptoms had developed while she was asleep. Laparotomy was carried out under heavy spinal anaesthesia and the fundus of the bladder was found to be ruptured. It was sutured and she was given penicillin and streptomycin. She made a good recovery and was discharged in about three weeks time. On May 21, when it was thought pregnancy was approaching full term, Caesarean section was performed and a full-term living child was delivered. She made an uneventful recovery but did not return for the repair operation which was advised. Dr. Graves comments that spontaneous rupture of the urinary bladder during pregnancy is a rare occurrence.

PROBLEMS IN MANAGEMENT OF ACUTE MYOCARDIAL INFARCTION

Gilchrist of Edinburgh, in a reprinted address to the B.M.A. and C.M.A., concentrates on five aspects of the management of acute myocardial infarction (*Brit. M. J.*, 1: 215, 1960).

Although in most cases a diagnosis of acute myocardial infarction is not difficult, the aid of such tests as transaminase level and erythrocyte sedimentation rate, together with the electrocardiogram, produces a high degree of diagnostic accuracy in the hands of experienced observers. A 94% accuracy of electrocardiographic diagnosis was confirmed by post-mortem examination in one group of cases, as compared with 35% accuracy in a group diagnosed by clinical judgment alone.

In view of the problems associated with anticoagulant treatment and the difficulty of handling such complications as shock, as well as the better nursing obtainable in hospital and the protection one can afford the patient from his relations and friends, Gilchrist recommends hospital care as the method of choice. Although bed rest is necessary in the early period following acute myocardial infarction, strict immobilization is undesirable. The patients should be encouraged to feed themselves one or two days after the onset, and raising the head of the bed on

blocks for a few hours each day will encourage the use of the legs to overcome the effects of gravity. "Chair treatment" is not necessarily the same as ambulant or active treatment. As soon as the acute phase of the illness has passed, sitting in a chair by the bedside in a relaxed and comfortable position may be encouraged. Physiotherapy is at least as important.

Gilchrist goes on to discuss the management of shock, left ventricular failure, thrombo-embolic phenomena, and arrhythmias. In cases of shock associated with left ventricular failure, digitalization may be a prerequisite for successful management of the low blood pressure. As regards thrombo-embolic phenomena, there is no question in the author's mind that anticoagulant therapy vigorously instituted and carried out is at present the only satisfactory method of reducing their incidence and of improving the mortality rates in acute myocardial infarction. In ventricular tachycardia, quinidine in repeated doses, with electrocardiographic control, has been successful in the hands of the author, who did not hesitate to use it intravenously in desperate situations.

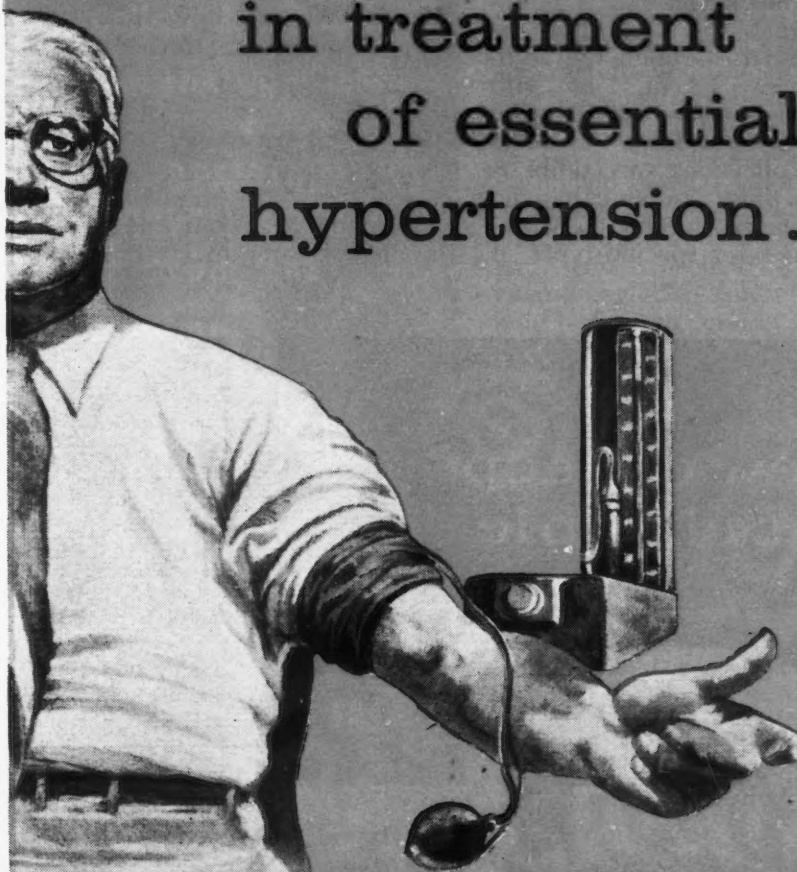
Return to work depends largely on the type of work and on the severity of the infarction. Possibly a month or so should be spent in psychological and physical rehabilitation. Here encouragement rather than restriction should be practised and the patient advised to do as much as or even a little more than he thinks he can. The majority of patients recover from the acute attack and lead useful and productive lives without severe disability or incapacity.

CLASSIFICATION SCHEMES SOUGHT

The Committee on Special Classifications of the Special Libraries Association and the Classification Committee of the Cataloging and Classification Section, Resources and Technical Services Division, American Library Association, are co-operating in a continuing project to develop and expand a Loan Collection of library classification schemes originally established by the Special Libraries Association. This Collection covers all fields of science, law, medicine, technology, the social sciences and the humanities.

(Continued on page 46)

unexcelled
in treatment
of essential
hypertension...



RAUTRACTYL

Squibb Benzhydroflumethiazide (Naturetin) and Rauwolfia Serpentina Whole Root (Raudixin) with Potassium Chloride

Rautractyl combines Naturetin, the best diuretic available in effectiveness, safety and potency with Raudixin, the cornerstone of antihypertensive therapy.

SUPPLY: Rautractyl-2 Tablets (capsule-shaped) containing 2 mg. Benzhydroflumethiazide (Naturetin) and 50 mg. Rauwolfia Serpentina Whole Root (Raudixin) with 400 mg. Potassium Chloride; bottles of 100. Rautractyl-4 Tablets (capsule-shaped) containing 4 mg. Benzhydroflumethiazide (Naturetin) and 50 mg. Rauwolfia Serpentina Whole Root (Raudixin) with 400 mg. Potassium Chloride; bottles of 100.

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MEDICAL NEWS in brief

(Continued from page 45)

New libraries or libraries with special collections are constantly asking for classifications—in all areas of knowledge—and it is imperative that the Collection be kept up-to-date through the addition of new schemes or with modernized versions of existing classification schedules. Curators of special collections, special librarians, and those individuals who have developed special classification schemes for specific types of

material or for special subjects are invited to contribute a copy of their work to the Collection. Classification schemes should be sent to: Dr. Jesse H. Shera, Curator, SLA Loan Collection, School of Library Science, Western Reserve University, Cleveland 6, Ohio.

CANCER RESEARCH
IN CANADA

Speaking to a joint meeting of the boards of directors of the

Canadian Cancer Society and the National Cancer Institute of Canada recently, Dr. H. E. Rawlinson of Edmonton, president of the Institute, said, "Cancer research in Canada has reached the point where we are making a worthwhile contribution to the world war against the disease. Although our effort must of necessity be smaller than that of the United States, for instance, our people are of the highest calibre, and, after all, success in this field comes from ideas as well as from dollars."

Most of the credit for the advances in cancer research must go to the National Cancer Institute of Canada and its affiliate, the Canadian Cancer Society. When the Institute was set up in 1947 little research was being done in Canada, and, in fact, there were few people who could do it. The Institute's first problem was to train research workers. By a system of fellowships through which graduates were sent for training to leading cancer research centres throughout the world this lack is being overcome, so that senior positions in research centres can now be filled by Canadians.

The National Cancer Institute of Canada has also introduced a system of grants-in-aid through which established scientists with ideas for cancer research can obtain the necessary funds. The list of people who have taken advantage of this reads like a Who's Who of Canadian science. Last year 81 projects were supported along with 27 fellowships, for a total of \$996,290.

PHENYLBUTAZONE
(BUTAZOLIDINE) IN
SUPERFICIAL
THROMBOPHLEBITIS

The beneficial effects of phenylbutazone in the treatment of thrombophlebitis have been known for several years. Stein, of New York, reported successful treatment of over 132 patients and later carried out experiments in rabbits which clearly demonstrated the preventive and curative effects of phenylbutazone following intravenous injection of an irritant.

Kimsey of Grand Prairie, Texas, (J. A. M. A. 172: 229, 1969), reviews briefly the action of phenylbutazone. He stresses the need for giving the drug with or shortly after meals and watching for signs

new concept
for chronic constipation



DECHOTYL
TABLETS*

provide physiologic support until normal bowel function returns



Each TABLET* contains:

DECHOLIN (dehydrocholic acid, AMES) 200 mg.
Desoxycholic acid 50 mg.
Dioctyl sodium sulfosuccinate 50 mg.

Available: Bottles of 50.

*AMES T.M. for trapezoid-shaped tablet

CANADA

of toxic reaction. His usual dosage schedule is 200 mg. of phenylbutazone three times daily for three days and then 100 mg. three times daily for four days. With this schedule he has treated 25 patients with thrombophlebitis in hospital and 15 in private practice. All patients responded to this short course and there were no side effects from the drug. He presents reports of three of the more difficult cases.

STAPHYLOCOCCAL SENSITIVITIES BEFORE AND AFTER ANTIBIOTIC THERAPY

One hundred and fifty-two instances in which bacterial sensitivity tests were available before and after antibiotics were given to patients are reported by Waisbren and Strelitzer (*Am. J. M. Sc.*, 238: 202, 1959). In 53 cases the sensitivity of staphylococci to the antibiotic administered remained the same. In 57 cases the second culture was more resistant and in 42 cases it was more sensitive.

In 17 cases in which a single antibiotic was given, five instances of increased resistance were found and in 27 cases where two antibiotics were given simultaneously (to both of which the initial culture was sensitive) 14 instances of increased resistance were observed. Thus, combining antibiotics did not appear to affect the subsequent development of resistance.

The authors' data support the concept that the administration of an antibiotic to a patient does not greatly influence the antibiotic sensitivity of staphylococci infecting that patient. Therefore, subtle influences other than antibiotic usage must be sought to explain the changing resistances of staphylococci to antibiotics. Furthermore, the data quoted in this paper do not show that the giving of combinations of antibiotics prevents increases in antibiotic resistance to staphylococci isolated from infections.

TREATMENT OF PREMENSTRUAL TENSION

Premenstrual tension is the term commonly applied to a syndrome occurring in a proportion of women in the days immediately preceding the menstrual cycle, and consists of irritability, depression, headache

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and swelling of the breasts and abdomen. Many theories have been advanced to explain this syndrome, the most popular of which is hormonal imbalance, especially a relative lack of progesterone with secondary water retention. Appleby (*Brit. M. J.*, 1: 391, 1960) carried out a trial of five medicaments—a diuretic, a tranquillizer, two types of oral progesterone and a placebo—in 32 unselected consecutive patients with moderate or severe premenstrual tension who had suffered from symptoms for at least six months without change. The average age was 28.1 years, the average duration of symptoms, 5¼ years; 22 were married, one was widowed, and seven were single; six of the married women were nulliparous. The drugs were given in random order, each being administered for a three-month period. The patients were requested to fill in a card, putting their response in one of the following categories: worse, no change, slight improvement, marked improvement, or complete relief of symptoms. Meproamate was the most effective treatment, giving complete or marked relief to over half of the patients, while chlorothiazide

had a similar effect in only one-third and the progesterone derivatives in about one-fifth.

Premenstrual tension is undoubtedly connected with some form of hormonal imbalance and water retention in a large number of cases, but there is, in addition, a marked functional element, which overshadowed the somatic symptoms in this series. Women who gain in body weight premenstrually do not necessarily suffer from premenstrual tension, so that if the emotional upset can be overcome patients may become symptom-free even though they continue to retain fluid before the periods. It therefore seems reasonable to start treatment with meproamate, and if that is not effective to give chlorothiazide, progesterone, or a combination of drugs.

EVALUATION OF CHLORPROMAZINE

The new era of psychiatric treatment has changed the nature of the psychiatric hospital environment and has increased discharge rates as well. It is often difficult therefore to assess the relative contributions of the drugs and newer milieu therapy to this progress. Rothstein (*New England J. Med.*, 262: 67, 1960) has attempted to evaluate the effects of withdrawal of chlorpromazine from patients who had made a good hospital adjustment in an open-ward environment while receiving this drug. It was hoped that in this manner the degree to which the drug was necessary for the continued hospital adjustment of the patient could be assessed—or the degree to which the drug, although presumably helping to make the initial hospital adjustment possible, was no longer necessary for maintaining such an adjustment.

The patients chosen for this study were from an open, continued-treatment ward. Seventeen patients met the criteria of having received chlorpromazine and shown a good hospital adjustment for at least six months while on this medication; the average age was 45 years, and the average hospital duration eight years. All patients were diagnosed as having schizophrenic reaction. Each patient was evaluated for one month on a behavioural-rating schedule that considered 17 categories of behaviour (for example, seclusive, angry, overtalkative, un-

(Continued on page 50)

PENICILLIN NUCLEUS ISOLATED BY BEECHAM RESEARCH TEAM

Reprinted from THE TIMES

A YOUNG TEAM MADE DRUG DISCOVERY

ADVANCE IN USES OF PENICILLIN

The names were announced yesterday of the four British scientists who have made a major discovery in antibiotics research by isolating the basic molecule of penicillin.

Leading the research team were Dr. G. N. Rolinson, aged 33, head of the microbiology department of Beecham research laboratories at Brockham Park, near Dorking, Surrey, and Mr. F. P. Doyle, aged 37, head of the chemical department of the laboratories. The other members were Mr. F. R. Batchelor, aged 28, biochemist, and Dr. J. H. C. Nayler, aged 32, an organic chemist. The team carried out their work under the guidance of Professor E. B. Chain, F.R.S., the Nobel Prize winner, who took part in the work which led to the discovery of penicillin.

It is claimed that the discovery (which was described in "Science and Medicine" in *The Times* yesterday) opens the way to the evolution of many effective new penicillins which can be specially made for specific diseases and conditions.

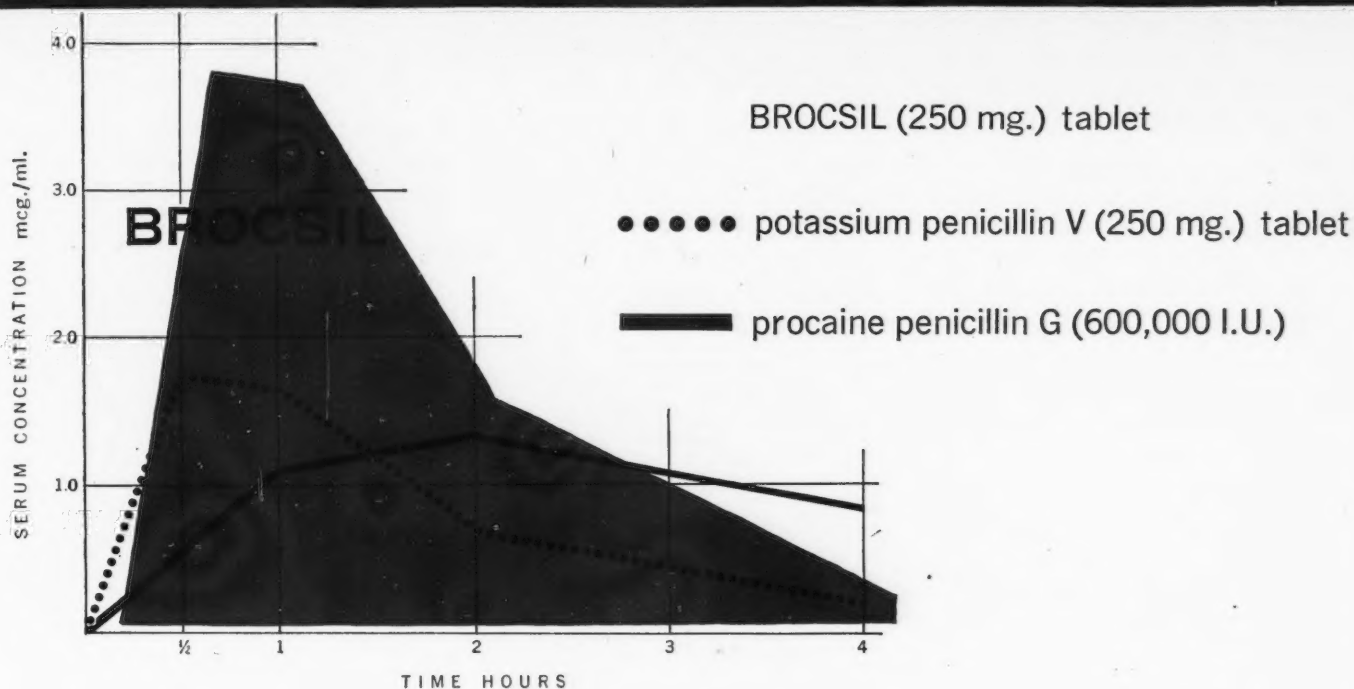
Synthetic Penicillin V
Potassium (o-phenoxymethyl) Penicillin

**AN ORAL
PENICILLIN MORE EFFECTIVE
THAN PARENTERAL
PENICILLIN G**

**BLOOD LEVELS AFTER ORAL
DOSES ARE SUPERIOR TO THOSE
FOLLOWING INTRAMUSCULAR
INJECTION OF PENICILLIN G AND
TWICE AS HIGH AS
POTASSIUM PENICILLIN V**

GREATER ANTIBIOTIC ACTIVITY

BROCSIL



Comparative crossover blood level studies were made on volunteer subjects receiving equivalent amounts of potassium penicillin V and Brocsil. Total antibiotic activity, as shown on above graph, indicate an almost 2 to 1 superiority of Brocsil over potassium penicillin V; blood levels after oral Brocsil are much higher than with intramuscular penicillin G.

INDICATIONS: for treatment of infection caused by penicillin-sensitive organisms.

DOSAGE: 125 mg. (200,000 I.U.) or 250 mg. (400,000 I.U.) three times a day according to the severity of infection. Continuous blood levels can be achieved by giving 125 mg. or 250 mg. every four hours round the clock.

Brocsil is available in 125 mg. (200,000 I.U.) and 250 mg. (400,000 I.U.) scored tablets.

Pediatric Solution—60 cc.—125 mg. per teaspoonful (5 cc.) Literature on request

MEDICAL NEWS in brief

(Continued from page 47)

tidy, indifferent, and hallucinated). After this evaluation all patients were given, in place of the chlorpromazine, a placebo tablet which resembled it. The patients were then rated twice weekly on the same behavioural rating schedule and the study was conducted for three months, results being evaluated on a monthly basis; each patient acted as his own control.

The results of this study suggest that chlorpromazine can be withdrawn from the majority of patients meeting the criteria described above for as long as three months without significant deleterious effects on most of the categories of behaviour measured. In fact, significant positive changes were more often seen than significant negative changes when the group as a whole was assessed. Although this study does not shed light on the role of the tranquillizers in initially helping the patient to make a good hospital adjustment, it suggests that the continuation of the drug for this adjustment is often unnecessary, at least for the three-month period of evaluation used in this study.

COOK COUNTY GRADUATE SCHOOL POSTGRADUATE COURSES

Cook County Graduate School of Medicine, Chicago, will offer the following intensive postgraduate courses during the spring and summer of 1960: General Practice Review, two weeks beginning July 11; Surgical Technique, two weeks, April 18, May 16; Blood Vessel Surgery, one week, May 9; Surgery of Colon and Rectum, one week, May 2, June 20; Vaginal Approach to Pelvic Surgery, one week, June 13; Office and Operative Gynaecology, two weeks, June 20; General and Surgical Obstetrics, two weeks, May 16; Internal Medicine, two weeks, May 2; Basic Electrocardiography, two weeks, May 16; Advanced Electrocardiography, one week, June 20. Numerous other courses will be offered by the Divisions of General Medicine, General Surgery, Fractures and Pediatrics. For further information, address The Registrar, 707 South Wood Street, Chicago 12, Illinois.

HIRSCHSPRUNG'S DISEASE (AGANGLIONIC MEGACOLON)

Recently a survey established that there was a 70% mortality in the neonate with Hirschsprung's disease. Further, in a study of 200 patients with aganglionic megacolon operated upon during the past 10 years, it was noted that 30 children, or 15%, had exploratory laparotomies as neonates, for apparent mechanical intestinal obstruction. Considering the high mortality figure in this disease,

such unnecessary operations should be avoided. These unnecessary explorations can be avoided by a barium enema examination. However, a few false-positive diagnoses may be made in this way. Rectal biopsy (to determine the presence or absence of ganglion cells) offers the only way of making an accurate diagnosis in the neonate.

Recommended treatment consists of colostomy as soon as the diagnosis is established. Resection of the aganglionic segment should be delayed until the child attains

DBI

trademark, brand of Phenformin HCl



the "full-range" oral hypoglycemic agent
...safely lowers blood sugar in mild, moderate
and severe diabetes, in children and adults

start low

a weight of 9.1 to 13.6 kg. (20 to 30 lb.)—O. Swenson and F. Z. Davidson, *New England J. Med.*, 262: 64, 1960.

VANCOMYCIN THERAPY IN STAPHYLOCOCCAL SEPTICÆMIA

Thirty-three patients with staphylococcal septicæmia were treated with vancomycin over a 19-month period. Most were in the older age groups, and many had serious underlying illnesses. Kirby

et al. (*New England J. Med.*, 262: 49, 1960) reported that 20 patients (60%) were cured. Deaths were attributable chiefly to overwhelming infections and to complications associated with severe underlying illnesses.

The effectiveness of vancomycin is attributable to the fact that staphylococci are uniformly susceptible, the antibiotic is bactericidal in action, high serum and tissue concentrations can be readily attained and resistance of staphylococci to vancomycin develops slowly if at all. With vancomycin,

there is little evidence of enhancement of bactericidal activity by the addition of other antibiotics, and vancomycin-resistant staphylococci have not so far been encountered. Even after prolonged therapy, staphylococci isolated in the present study from blood, empyæma fluid and wounds remained uniformly sensitive to vancomycin. The chief limitation in the use of this drug is the necessity of administering it intravenously. Side effects, consisting of chills, fever and rashes, occurred in a small percentage of patients and could usually be controlled by slower administration and by the addition of antihistamines or steroids.

CZECHOSLOVAK CONGRESS OF RHEUMATOLOGY

The Czechoslovak Society of Physical Medicine is holding the Czechoslovak Congress of Rheumatology with international participation from September 21 to 25, 1960, in Piestany, the world-famous spa. Two subjects will form the principal part of the program: rheumatoid arthritis and ochrotoxic arthropathy.

Time is reserved also for subjects of free choice. Papers will be read by leading research workers from Bulgaria, Denmark, Finland, France, Germany, Great Britain, Hungary, Italy, Norway, Poland, Rumania, Soviet Union, Sweden, the U.S.A. and Czechoslovakia. The official languages of the Congress will be English, French, Russian, German, Czech and Slovak. Simultaneous translation to and from the official languages will be provided.

Excursions to Bratislava, the capital of Slovakia, and to the Tatra Mountains, etc., and social and cultural functions will be arranged. A special program is being prepared for families accompanying members.

The Secretariat of the Czechoslovak Congress of Rheumatology, Praha 2, Na slupi 4, will be pleased to give any further information that may be required.

EARLY DIAGNOSIS OF CANCER OF COLON AND RECTUM

Although the early diagnosis of cancer of the colon is never easy and can sometimes be very difficult, the diagnosis of cancer of the

(Continued on page 52)

The "Start Low! Go Slow!" dosage pattern with DBI enables a maximum number of diabetics to enjoy the convenience, comfort and satisfactory regulation of oral therapy in:

stable adult diabetes
unstable (brittle) diabetes
juvenile diabetes
sulfonylurea resistant diabetes

"Start Low! Go Slow!" means low initial dosage (25 mg., or 50 mg. in divided doses, per day) with small dosage increments (25 mg.) every 3rd or 4th day until blood sugar levels are adequately controlled. Injected insulin is reduced gradually with each increase in DBI dosage. Satisfactory regulation of mild stable diabetes is usually achieved with DBI alone.*

On "Start Low! Go Slow!" dosage, DBI is relatively well tolerated.

Over 3000 diabetics have been carefully studied on DBI daily for varying periods up to three years. No histologic or functional changes in liver, blood, kidneys, heart or other organs were seen.

DBI (N¹-β-phenethylbiguanide) is available as white, scored tablets of 25 mg. each, bottles of 100.

*Send for brochure with complete dosage instructions for each class of diabetes, and other pertinent information.

An original development from the research laboratories of

Warrington-funk laboratories, division
U. S. vitamin corporation of canada, Ltd.
1452 Drummond Street, Montreal, Quebec

go slow

MEDICAL NEWS in brief

(Continued from page 51)

rectum at all stages rests on proper rectal examination and should be immediately apparent. Wilson (*M. J. Australia*, 2: 921, 1959) in a series of 200 patients found that, when first seen, 12% with cancer of the colon and 7% with cancer of the rectum were inoperable for various reasons. Early diagnosis is therefore essential if this salvage rate is to be improved. From his study, Wilson concluded that there is no characteristic sign or symptom

of cancer of the large bowel, be it early or late, and that in the early stages of cancer of the large bowel, the symptoms are often extremely vague: there may be some change in bowel habit, but alternating constipation and diarrhoea do not occur early unless there is impaction of a mass of faeces above a constricted area.

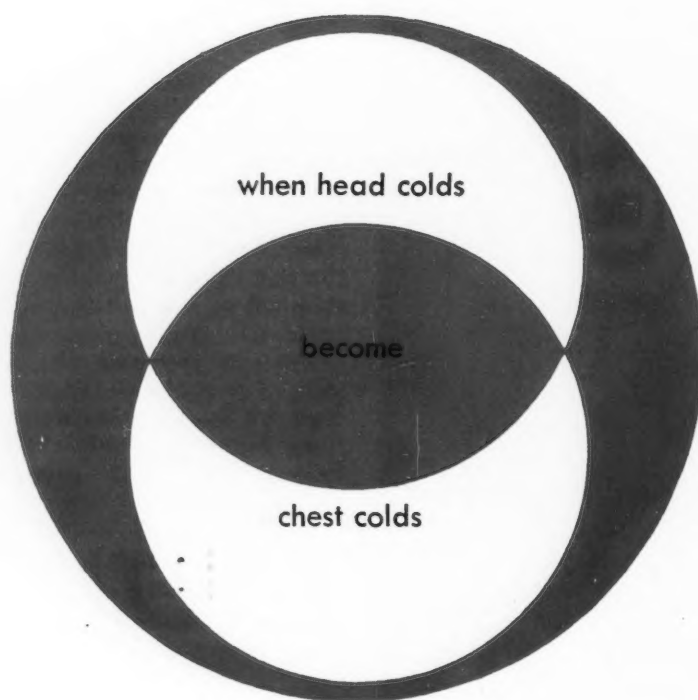
Once a mild degree of obstruction has developed anywhere in the large bowel, there may be a feeling of fullness in the abdomen, especially in the right iliac fossa—

presumably because of distension of the caecum. When the obstruction is in the sigmoid colon, meals may be followed by discomfort in the left iliac fossa. Even though there is no apparent anaemia, hypoproteinaemia, electrolyte deficiency or vitamin deficiency, some patients with cancer of the large bowel complain of weakness at an early stage. Soiling of the underclothes may be the initial symptom of a cancer of the rectum. In the later stages of the disease overt incontinence frequently develops.

Diagnosis of cancer of the large bowel depends on the history, clinical examination, sigmoidoscopy and x-ray examination. Occult blood tests, although not diagnostic, are useful in increasing a suspicion of the presence of cancer. Barium enema x-ray examination is practically useless in detecting an early carcinoma of the rectum. Further, on barium enema x-ray examination adherent faecal material may give a false positive result, and small growths may be overlooked. Most cancers of the rectum are palpable per rectum, and so are cancers of the colon, for they may cause a temporary intussusception and come within reach of the finger. An increased preparedness to suspect the presence of cancer of the large bowel on flimsy evidence and to follow up that suspicion is essential if more cases are to be recognized at the stage when cure is possible.

TREATMENT OF CARDIOTOXIC EFFECTS OF QUINIDINE

Severe toxic reactions due to quinidine administration are well known and are always a potential hazard of the treatment of cardiac arrhythmias. Bailey of the University of Virginia Hospital reviews the toxic effects of quinidine and reports two cases in which severe cardiac depression was produced when attempting to convert auricular fibrillation to normal sinus rhythm with quinidine (*A.M.A. Arch. Int. Med.*, 105: 13, 1960). In the first case quinidine administration resulted in idioventricular rhythm at the rate of 33 a minute, and administration of molar lactate produced first an irregular rhythm at the rate of 50 to 60 and then reverted to auricular fibrillation with normal ventricular complexes; finally at the termination of molar lactate treatment, the electrocardiogram showed sinus rhythm with



Novahistine-DH LIQUID

controls cough spasm and decongests air passages. Fortified Novahistine Elixir, combined with dihydrocodeinone relieves respiratory congestion and controls useless, exhausting cough. And the delicious grape flavor of Novahistine-DH **appeals to both adults and children.**

Each 5 cc. teaspoonful contains: phenylephrine HCl, 10 mg.; pheniramine maleate 12.5 mg.; dihydrocodeinone bitartrate, 1.66 mg.; chloroform, approx. 13.5 mg.; and l-menthol, 1 mg. For convenience your prescription may be placed with your patient's pharmacist by telephone.



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first-degree A-V block. In the second case, quinidine administration resulted in bigeminy and intraventricular block (the quinidine blood level was not as high as in the first case). Soon after molar sodium lactate was administered, the complexes became more normal and, finally, the rhythm reverted to auricular fibrillation.

It is of interest that at the height of quinidine plasma concentration in the first case (22 mg. per litre) the potassium level rose from 5 to 6.3 mEq. and the chloride and sodium levels dropped. When molar lactate was administered, the electrolytes promptly changed towards more normal values. The author emphasizes the individual variations of plasma concentration of quinidine in different patients receiving a similar dose. The first patient had received only 2.4 g. of quinidine sulphate at the time when the level rose to 22.8 mg. per litre. Congestive heart failure and impairment of renal excretion are suggested as the cause of this high accumulation in the plasma.

Reversal of the toxic manifestations of quinidine by administration of molar sodium lactate suggests that the latter has an antagonistic effect on the cardiac depressant action of quinidine. Bailey believes that this may be due to its influence on electrolyte concentration and perhaps on blood pH. He reviews experimental work on heart muscle perfused with quinidine; it suggests that some of the action of quinidine on the heart is to produce alterations in the ionic equilibrium which takes place during the cardiac cycle. Inhibition of the acting transport systems (sodium-potassium shifts during depolarization and repolarization) and introduction of high concentrations of sodium ions with the molar sodium lactate may counteract the above derangements. This would tend to re-establish the normal sodium-potassium equilibrium and shifts required for normal myocardial activity.

INFECTION OF ANEURYSM OF THE ABDOMINAL AORTA

With the increase in age of the general population, the incidence of aneurysms of the abdominal aorta is bound to increase in the future. Ten Eyck and co-workers of the Mayo Clinic report a case of infected arteriosclerotic aortic

(Continued on page 56)

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requires
steroid
therapy*



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Squibb Triamcinolone

- safe to use in asthma with associated cardiac disease; no sodium or water retention; supplemental potassium not necessary
- far less gastrointestinal distress
- does not produce secondary hypertension
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- no unnatural psychic stimulation to mask desired clinical response
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- and on a lower daily dosage range

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1. Taheri, Z. E.: Urevert in Cranial Trauma and Brain Surgery, J. Internatl. College of Surgeons 32:389 (Oct.) 1959.

2. Javid, M.: Urea—New Use of an Old Agent, Reduction of Intracranial and Intraocular Pressure, The Surgical Clinics of North America, Philadelphia, W. B. Saunders Company, Aug. 1958, p. 907.



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MEDICAL NEWS in brief

(Continued from page 53)

aneurysm and emphasize the significance of fever in this condition (*Proc. Staff Meet. Mayo Clin.*, 35: 1, 1960).

A 70-year-old man, admitted to hospital ten days after developing an influenza-like illness with persistent anorexia, nausea, fever and sweat, complained of dull pain in the back and abdomen of three

days' duration. In hospital his temperature was 102° F., and white blood cell count 19,400 per c.mm. A large, non-tender, pulsating upper abdominal mass with a bruit over it was noted. The patient developed severe abdominal pain 36 hours after admission, followed by collapse and death. At autopsy evidence of infection in the wall of the aneurysm was present and, although no cultures

were obtained, there is no doubt in the authors' minds that they were dealing with an infected aneurysm. They emphasize that fever is most unusual in ordinary cases of arteriosclerotic aneurysm. On the other hand, several cases have been reported in the literature where fever was associated with infection of the aneurysm and where culture confirmation in some and microscopic findings in others were obtained. In one group of 11 cases, eight had salmonellosis and ten were febrile. Of the nine fatal cases, rupture of the aneurysm occurred in eight. In two patients the infected aneurysm was excised successfully. Antibiotic therapy is usually not very effective and surgery is the ideal method of treatment. Prompt and intensive antibiotic therapy of potential bacterial infection is advocated in the hope of preventing involvement of the aneurysm.



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J. Settel, E.: *Am. Pract. & Digest Treat.* 8:1584 (Oct.) 1957.



26th INTERNATIONAL CONGRESS ON ALCOHOL AND ALCOHOLISM

The 26th International Congress on Alcohol and Alcoholism will be held in Stockholm from July 31 to August 5. The work of the congress will be divided into sections around two main themes, alcohol and the community, and research problems. The congress is open to research workers and others interested in the problems. The fee is \$15.00 [American]. Further information can be obtained from: Anders Nerman, General Secretary, 26th International Congress on Alcohol and Alcoholism, Box 5071, Stockholm 5, Sweden.

TWO COURSES OFFERED BY NEW YORK UNIVERSITY

The New York University Post-Graduate Medical School offers the two following courses during April and May: (a) a full-time course of five days' duration, April 4 to 8, on tuberculosis and other pulmonary diseases in childhood, given under the direction of Dr. Rosa Lee Nemir; (b) a full-time course of five days' duration, May 9 to 14, on hæmatology, given under the direction of Dr. Leo Weiner. For further information apply to the Office of the Associate Dean, New York Post-Graduate Medical School, 550 First Avenue, New York 16, N.Y.